Spring 5-4-2012

Extended Hyperlink Mobilizing Education through Social Networks

Zachary D. P. Johnson
University of Nebraska-Lincoln, zjohnson10@huskers.unl.edu

Extended Hyperlink

Mobilizing Education through Social Networks

by Zack Johnson

A Terminal Project
Presented to the Faculty of
The College of Architecture at the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Master of Architecture
Major: Architecture
Under the Supervision of Professor Janghwan Cheon
Lincoln, Nebraska
May, 2012

University of Nebraska-Lincoln
College of Architecture
232 Architecture Hall
Lincoln, NE 68588-0107
(402) 472-7943

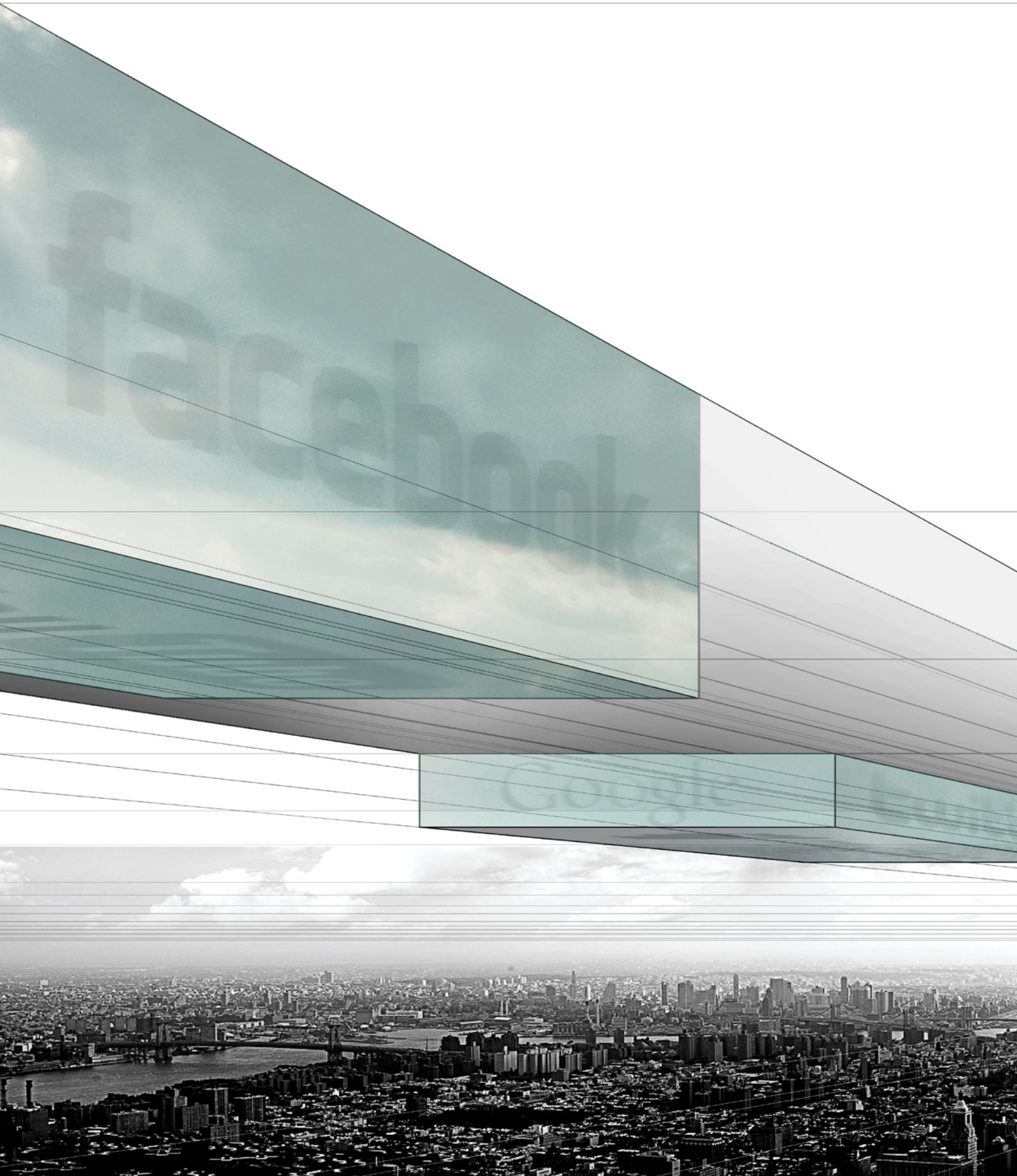
http://archweb.unl.edu/

contents

Part I: Research + Analysis

Part II: Proposal

Part III: Summary


facebook

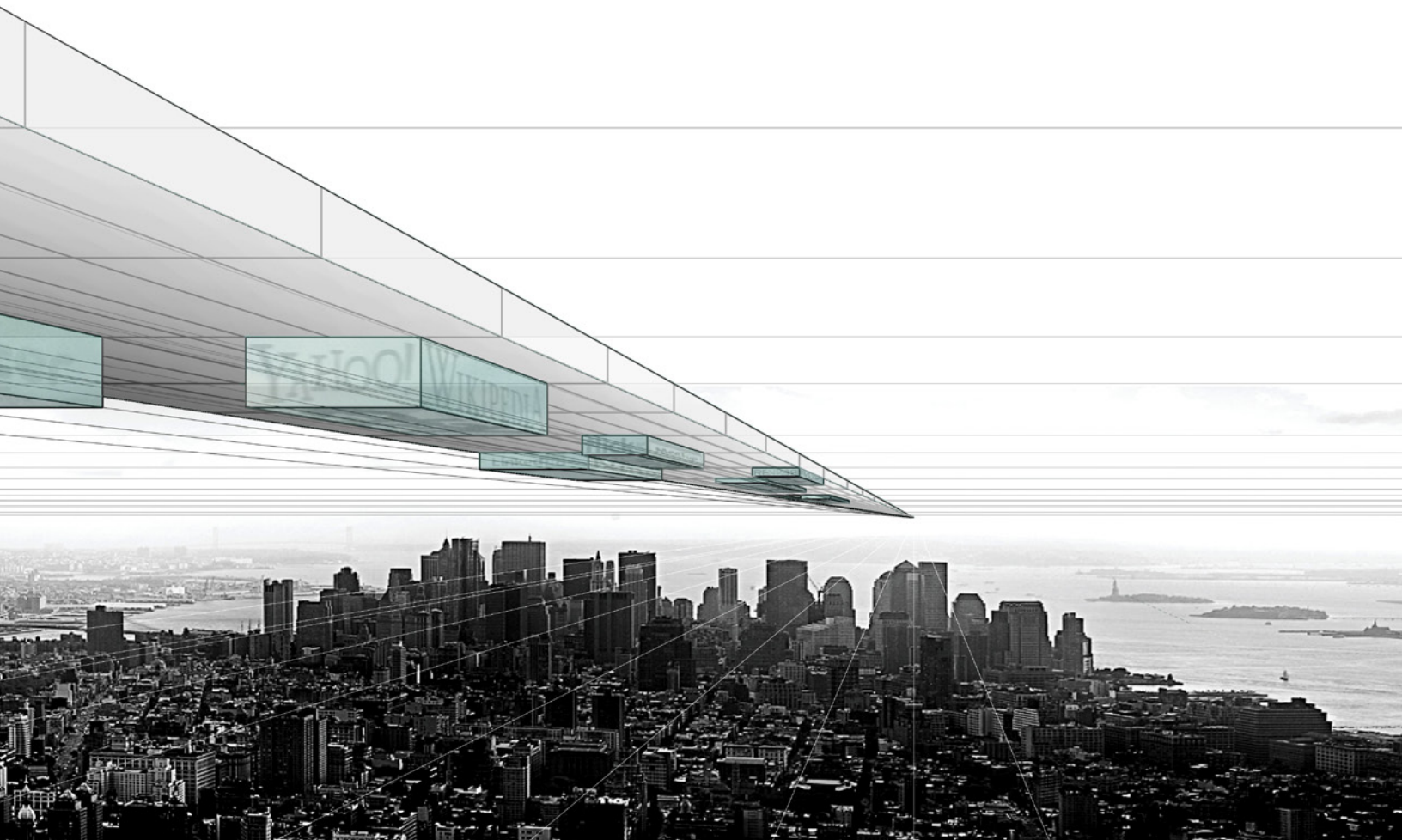
ABSTRACT

The moment we are living in is the largest increase in expressive capability in human history! The new media landscape that we are all now a part of has played a critical part in this and it has reconstituted the way people gather and transfer knowledge. The learning process is now continuous and does not begin nor end with the school building. This thesis is a critical look into the university educational system in America that starts by exploring the relationship between educational environments and the way new media and social networking are changing the social behavior of today's student. The goal is to understand the role of learning environments in the process of learning and whether this process can benefit from new spatial typologies and teaching methodologies.

The significance of the public institution as a center for information exchange and knowledge transfer has diminished in the 21st century in favor of new forms of networking communications, including distance and mobile learning strategies. With seven thousand students dropping out every school day, the need exists for exploring the development of work environments for students that are more stimulating and engaging in order for them to benefit in our society.

This thesis rethinks the contemporary university institutional model to consider the affects of new media on a student's individual and community interaction. If architecture is to respond to the evolving means of personal interaction, shouldn't then architecture be able to adapt and respond to its users? The ability for architecture to meet the changing needs of evolving individual, social and environmental demands can suggest new ways to interact with space and other users and allow for a new form of sensory perception. This thesis aims to redefine the conventional thinking of people as users of architecture, to people as participants of architecture in order to understand how new adaptive spatial environments can challenge participant interaction and improve the education process.

As digital communication influences the way people communicate in society, there exists a need for an architecture that responds to this. I propose that contemporary urban space and architecture be designed with an integrative approach that address both urban and media spaces of social interaction. The construct of static architecture can no longer facilitate the needs of society and therefore what is required must respond more directly to the ever changing needs of the individual student.

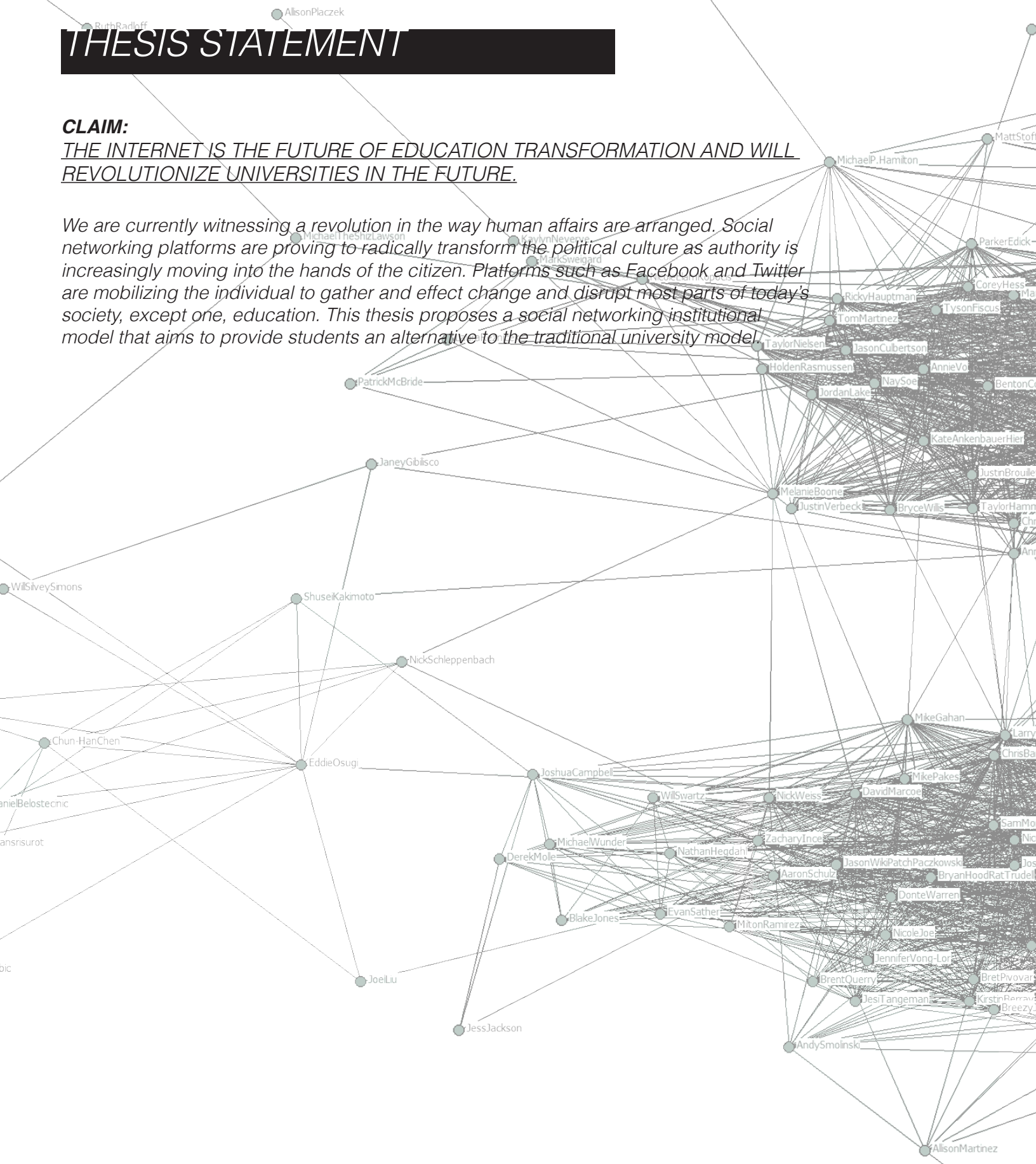


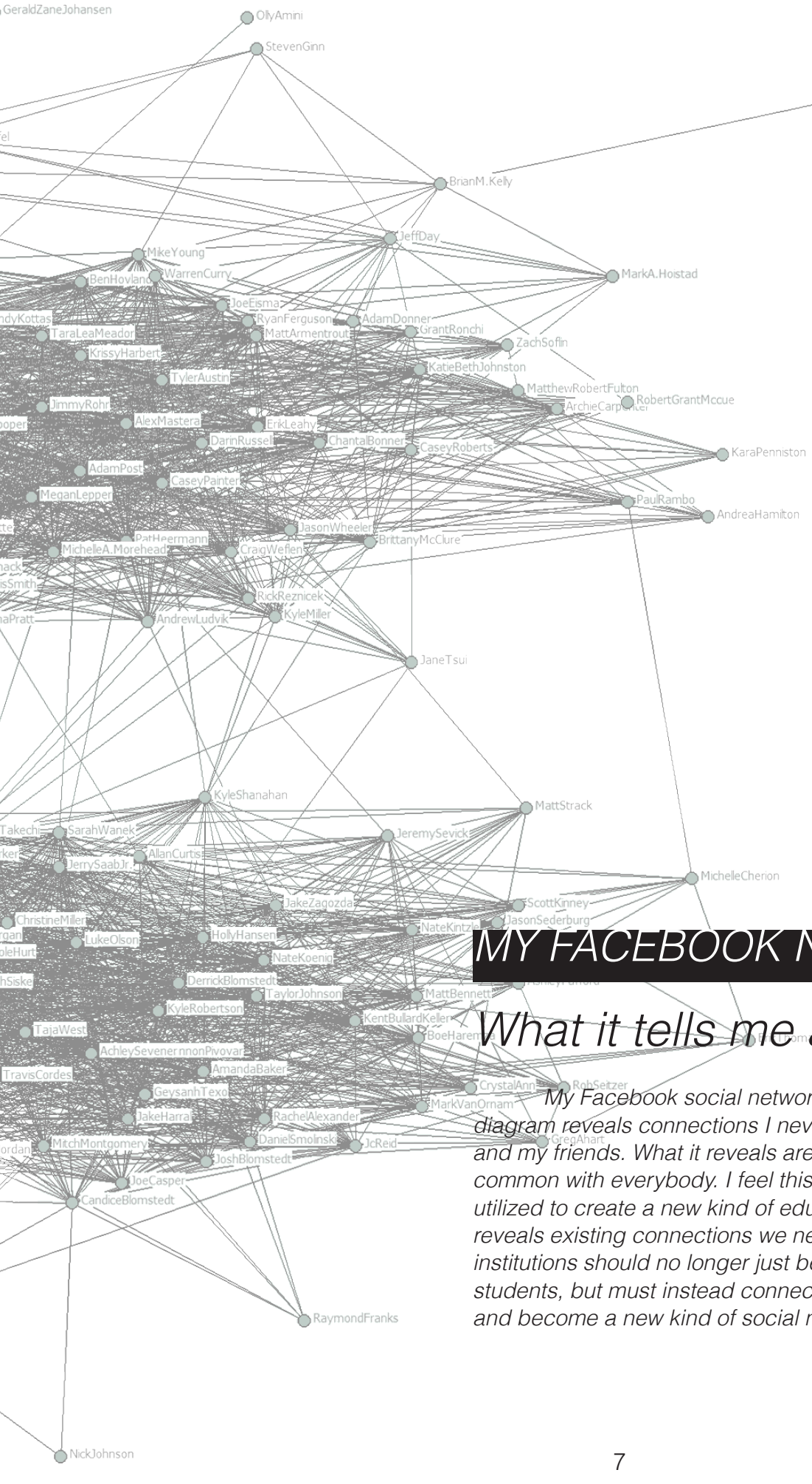
THESIS STATEMENT

CLAIM:

THE INTERNET IS THE FUTURE OF EDUCATION TRANSFORMATION AND WILL REVOLUTIONIZE UNIVERSITIES IN THE FUTURE.

We are currently witnessing a revolution in the way human affairs are arranged. Social networking platforms are proving to radically transform the political culture as authority is increasingly moving into the hands of the citizen. Platforms such as Facebook and Twitter are mobilizing the individual to gather and effect change and disrupt most parts of today's society, except one, education. This thesis proposes a social networking institutional model that aims to provide students an alternative to the traditional university model.

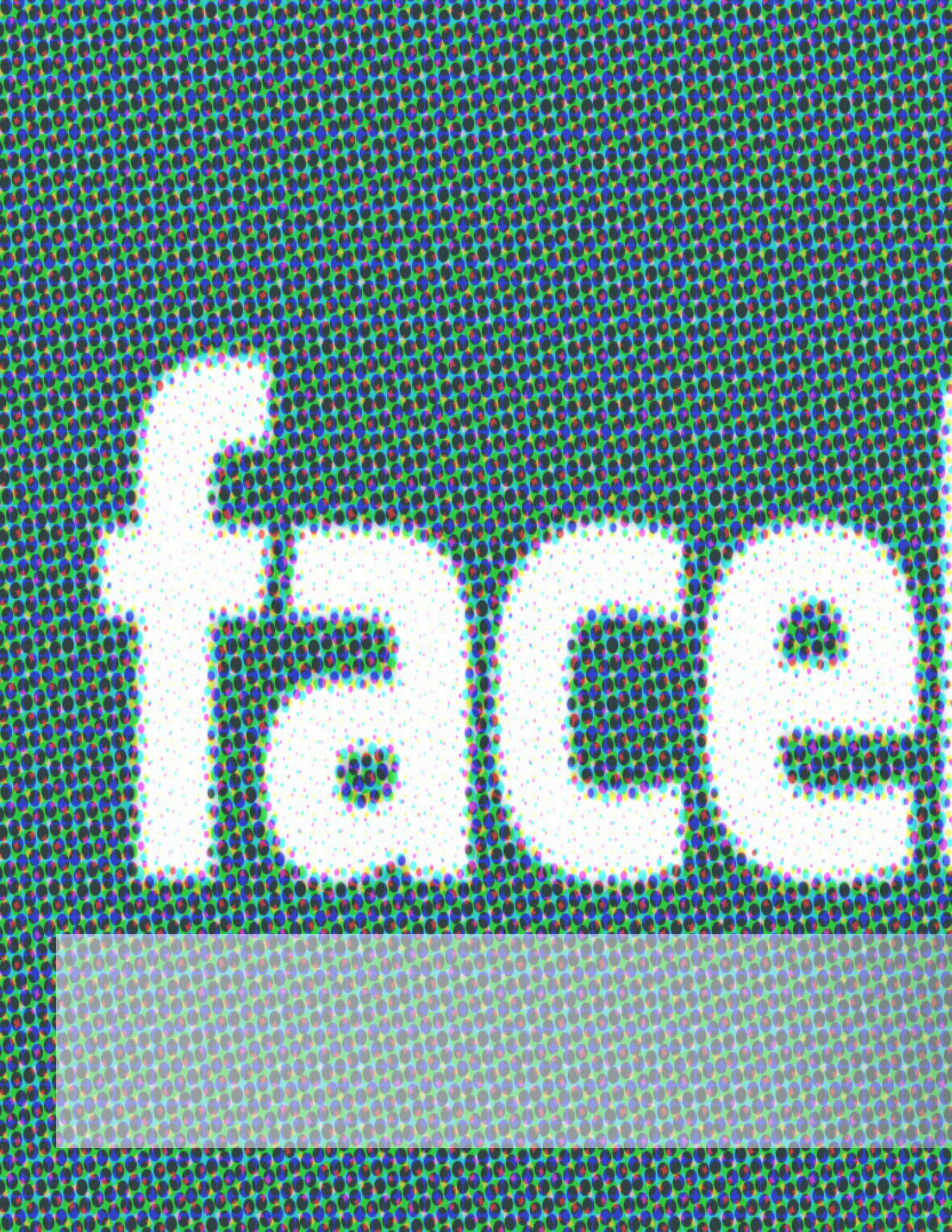


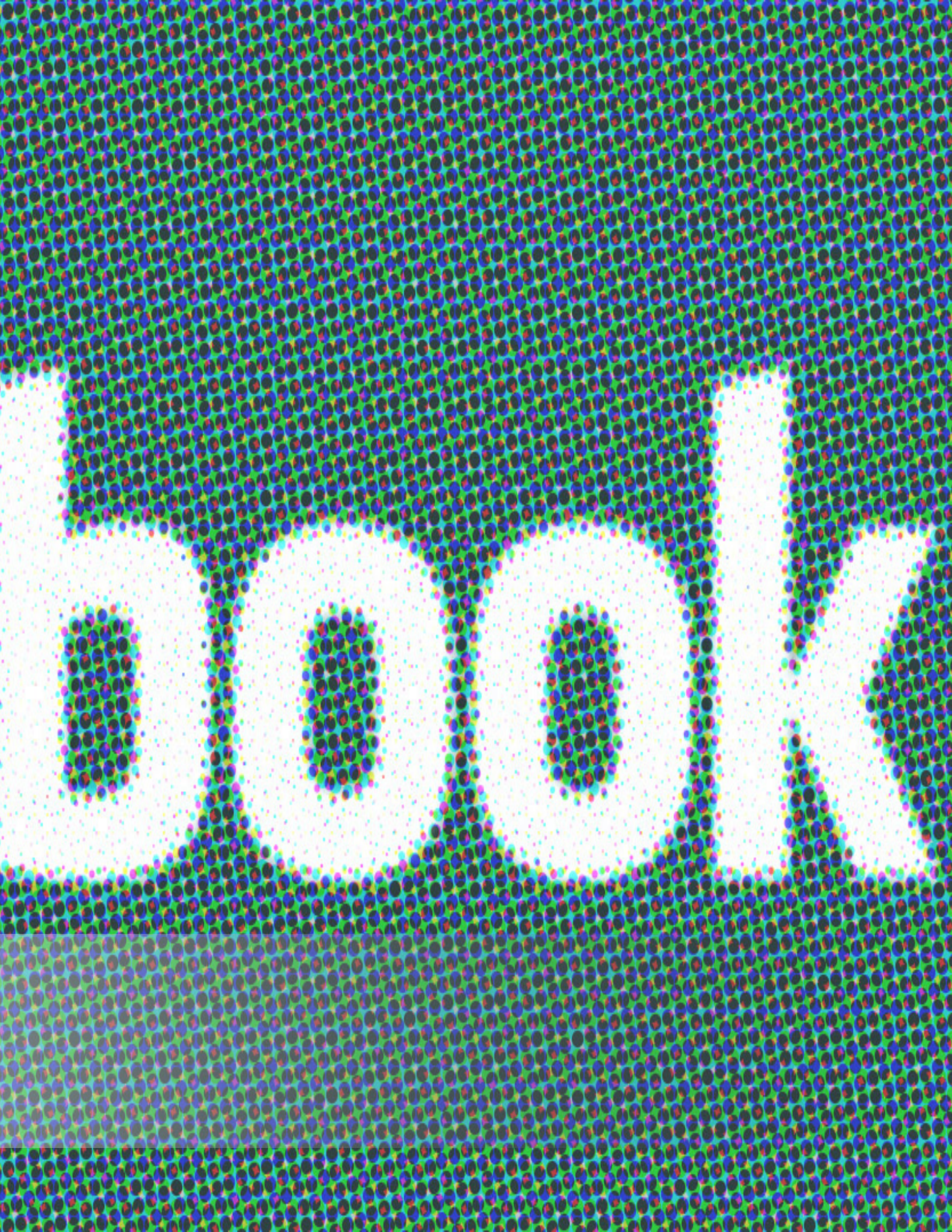


MY FACEBOOK NETWORK

What it tells me about myself?

My Facebook social network when visualized as a diagram reveals connections I never knew existed between me and my friends. What it reveals are the shared friends I have in common with everybody. I feel this kind of information can be utilized to create a new kind of educational institution model that reveals existing connections we never knew existed. Educational institutions should no longer just be about simply educating their students, but must instead connect students with one another and become a new kind of social network.





SOCIAL MEDIA

Social Media Revolution

What is the role of place in a networked society? This question is at the crux of an investigation that aims to understand how today's student engages not only the physical world, but the increasingly more prevalent digital world. As we conquer the remainder of the physical world, the transition from a collective to a connective society will transform how we arrange human affairs.

"Give me extension and I will build you a world."

-Descartes

"Networks of communication, like any technology, are prosthetic extensions of the body. They are new body parts and constitute a new organism, a new spatial system, a new architecture."

-Jean Baudrillard
Toward a Critique of the Political Economy of the Sign

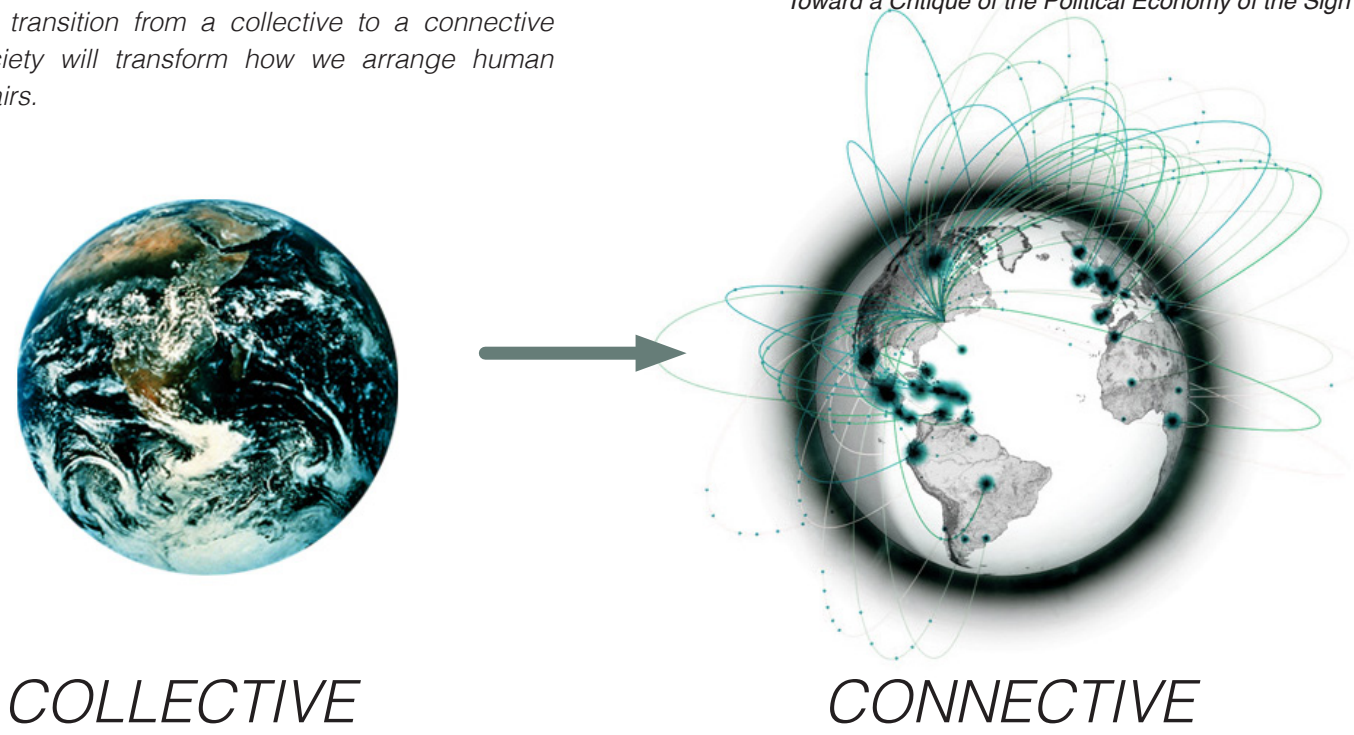


FIGURE 1.1
Transition from a global collective to a global connective.

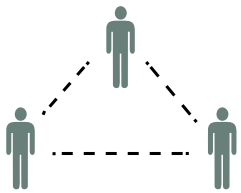
FIGURE 1.2
Facebook network distribution/December 2010.

Facebook was the most-searched term in 2010.

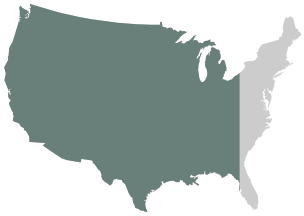
800 million -active users on Facebook

350 million -active users accessing Facebook through a mobile device.

The **18-24** (College) Demographic grew the fastest at **74%** in **one year.**



130 -number of friends average user has.



There are **206.2 million** internet users in the U.S. **71.2 %** of the U.S. Web audience is on Facebook.

70% of the facebook userbase resides **outside** the U.S.A.

57% of people talk to people **more online,** than in real life

FIGURE 1.3
Facebook global dominance.

The Power of Social Networks - Architecture of Participation

News

Social networks credited with role in toppling Egypt's Mubarak

Activists used Facebook, Twitter, YouTube to mobilize during protests

By Sharon Gaudin
February 11, 2011 03:28 PM ET

8 Comments Like 337 +1 0

Computerworld - As Egypt's embattled President Hosni Mubarak gave up his presidency Friday, analysts and some of the Egyptian protestors said he'd still be in charge if not for the power of social networking.

After 18 days of tumultuous protests and stubborn refusals to leave a position he's held for 30 years, Mubarakgave up power today, handing over authority to the nation's military leaders. During a time of unrest that saw Mubarak's regime disconnect Egypt from the Internet for several days, social networking sites like Facebook and Twitter served as critical tools for the people seeking to topple the long-time ruler.

President Barack Obama this afternoon noted the role of technology in the uprising, praising Egyptians who used "their creativity, talent and technology to call for a government that represented their hopes and not their fears."

"I certainly do not think he would have left office at this point if it wasn't for social networking tools," said Brad Shimmin, principal analyst with Current Analysis. "I think they wanted all eyes to be turned away from the uprising, but the crackdowns on Internet access failed.

SOCIAL MEDIA A VOICE OF FREEDOM IN MIDDLE-EAST

THURSDAY, JUNE 9TH, 2011 BY GHIDA BASMA

Like 11 Tweet 13 Share 3

Not that long ago, if you asked Middle-Eastern leaders whether they felt threatened by social media tools and the internet, their answer would most likely have been NO. However, recent events in the region have presented new thoughts for consideration about the significance of social media to the political and social scene.

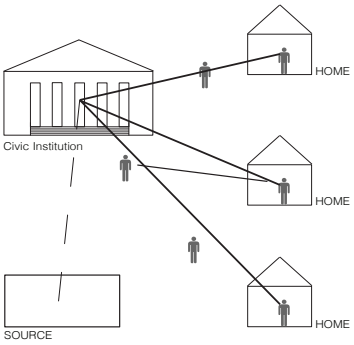
The growing trend of using social media in the Middle East is sparking change and fuelling transformation across nations. Networking sites are facilitating change, giving people hope that fundamental change is possible and that they have the power to drive it.

FIGURE 1.4
Facebook was used to help organize protests in the Occupy Movement as well as the uprisings in the Middle East.


YOU CANT
EVICT AN
IDEA
WHOSE TIME
HAS COME
WALL
ACCUP

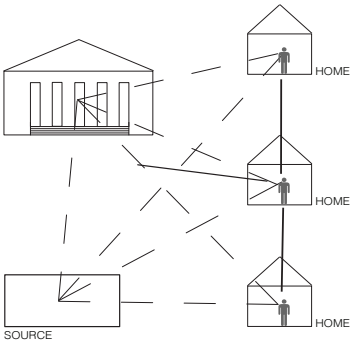
The Decline of the Public Sphere

Primary Connections



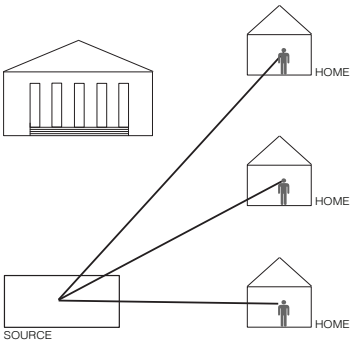
Printing Press

The introduction of print media facilitated the centralization of power and fostered national identity. Civic institutions are a critical component of public life, presiding over society and often dictating information exchange.



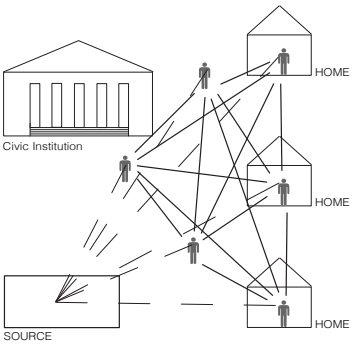
Telephone

The introduction of the telephone replaces the need to assemble in order to communicate with one another which initiates the decline in the public institution.



Television

The television and electric media turned the living room into a new form of public space and the role of the civic institution diminishes in public life.



Internet

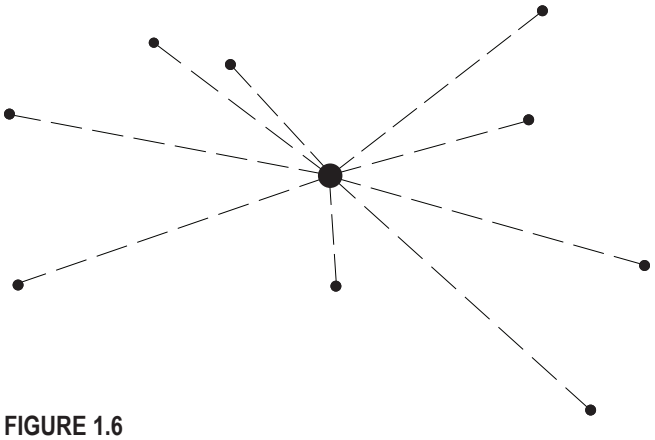
Individuals can access global events and complete everyday activities from anywhere with mobile media devices, and can participate and engage in-depth in the unfolding of events through the internet. This severely diminishes the importance of the public library and other civic institutions.

FIGURE 1.5

The internet allows for a many-to-many connection and helps organize group intelligence.

Centralized Power

Decentralized Power



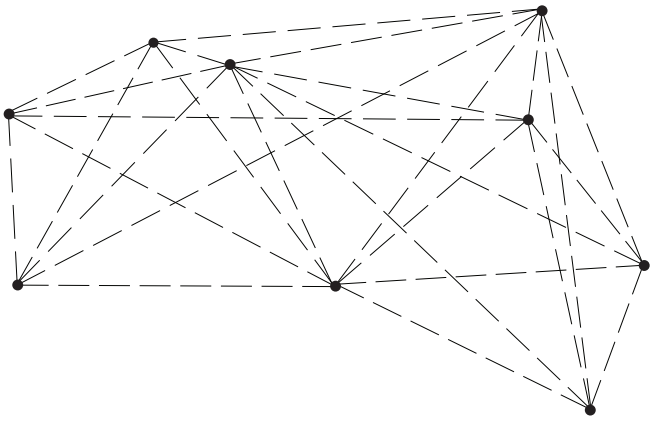


FIGURE 1.6
The book is quickly losing its centralized power as a source of knowledge to the decentralized power of the internet.

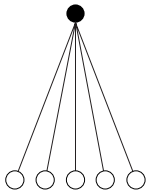
social media

Why is Social Media Popular?

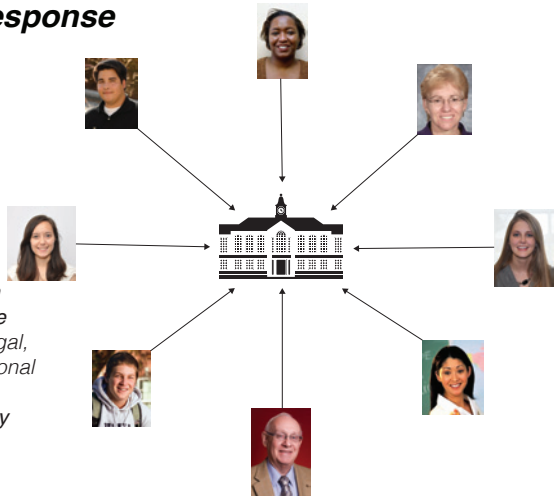
The Institutional model in state at a majority of US colleges requires such vast management, economic, legal, and physical structural problems that they will always remain years behind what the market demands. The immediate issue universities face is that they require the physical presence of its students which is proving difficult for many to maintain their enrollment. They are simply losing out to online and more up to date learning models.

Where I see a real advantage for the traditional university is to adopt a social networking platform that allows for mobile learning. The cooperative infrastructure built into social networking platforms such as Facebook allows for education "in-real-time." No need to plan years in advance, but instead, educational curriculums can be constantly updated on the spot.

Institutional Response



1. Management Problem
2. Have to bring structure into place (economic, legal, physical), creates additional costs
3. Inherently exclusionary



Cooperative Infrastructure

facebook

flickr

-Replaces planning with coordination

-Puts coordination into the infrastructure.

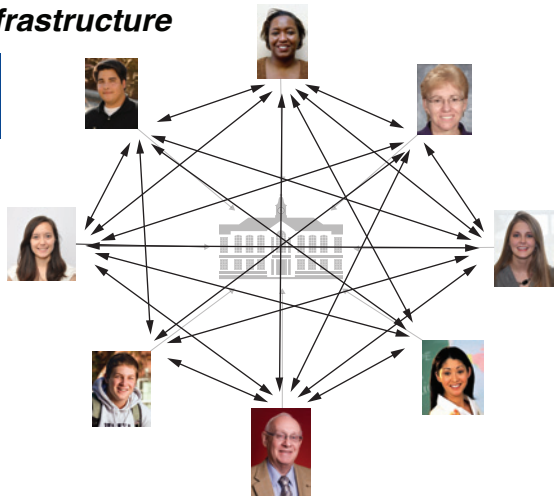


FIGURE 1.7
Cooperative Infrastructure challenges the need for physical places and acts as a much more efficient planning model.

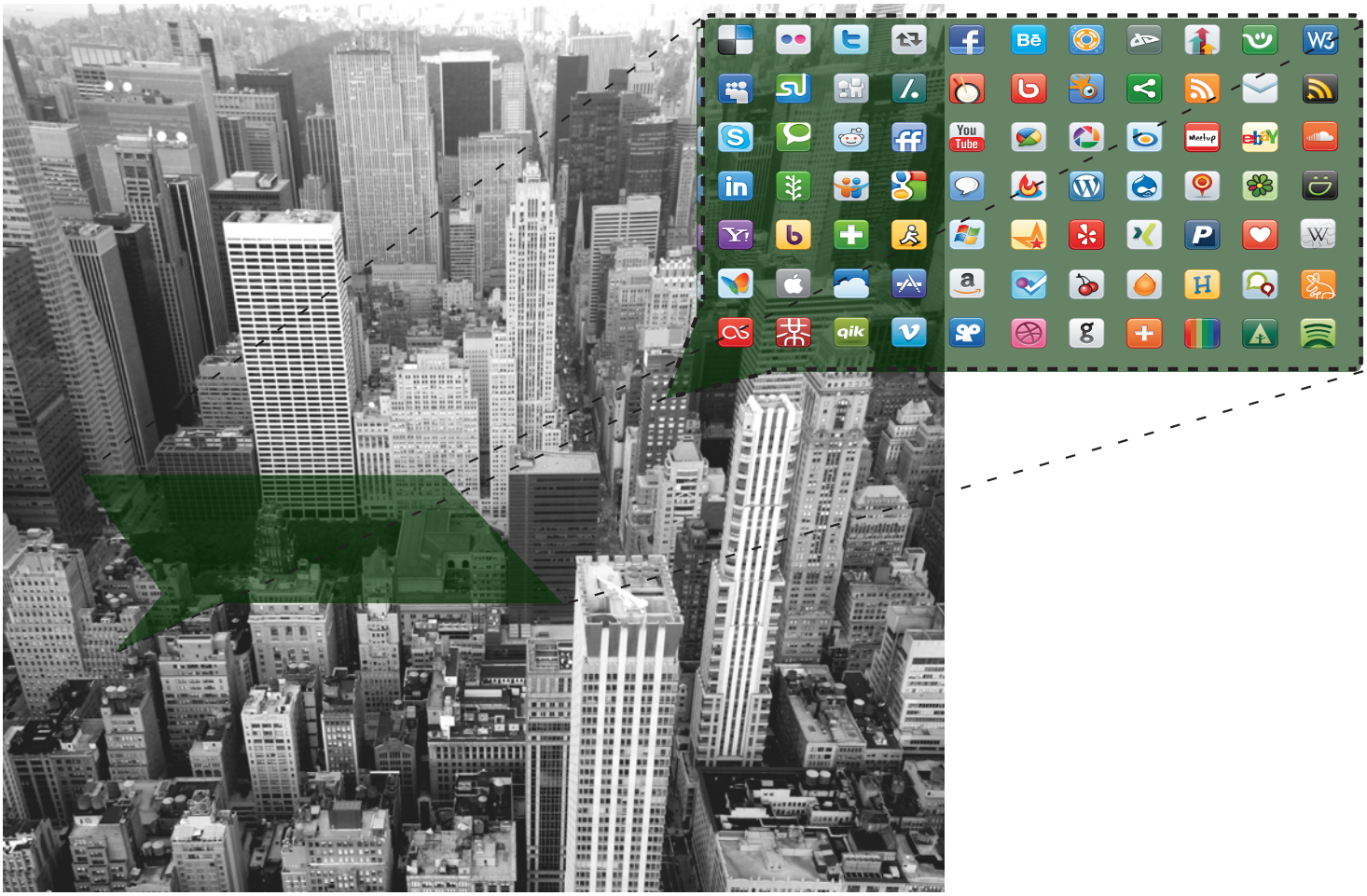
SOCIAL MEDIA

Why is Social Media Popular?

The explosion of social media in the past couple years is large in part to today's young student population. This has ultimately created a new kind of student, one far more reliant and dependant on digital interaction. As a result, students often feel bored and incoherent in classrooms designed for previous generations. The need for a new understanding of how we organize group intelligence will help engage today's socially networking student.

Internet Use		June 2010	June 2009
01	**Social Networks**	**22.7%**	**15.8%**
02	Online Games	10.2%	9.3%
03	E-mail	8.3%	11.5%
04	Portals	4.4%	5.5%
05	Instant Messaging	4.0%	4.7%
06	Videos/Movies	3.9%	3.5%
07	Search	3.5%	3.4%
08	Software Manufactures	3.3%	3.3%
09	Multi-category Entertainment	2.8%	3.0%
10	Classifieds/Auctions	2.7%	2.7%

FIGURE 1.8
Social Networking is increasing its stronghold as the primary activity students engage in online.



Blogs *1994*

\+ *-allowed anyone to state an opinion*
-share an opinion
-spark a conversation
-remain anonymous

\- *-lack immediate interaction*
-lack chat capabilities

MySpace *2003*

\+ *-music and chat features*
-web personalization
-profiling

\- *-lack ability to adapt*
-lack of loyalty to its users
-lack of innovation
-slow to adapt technologies
-spammers

facebook *2004*

\+ *-sharing and updating*
-being 'in the know'
-keeping in touch
-interaction with friends through games and other apps
-sending/receiving gifts
-uploadings unlimited photos
-clean simple design
-allows business to communicate directly with customers

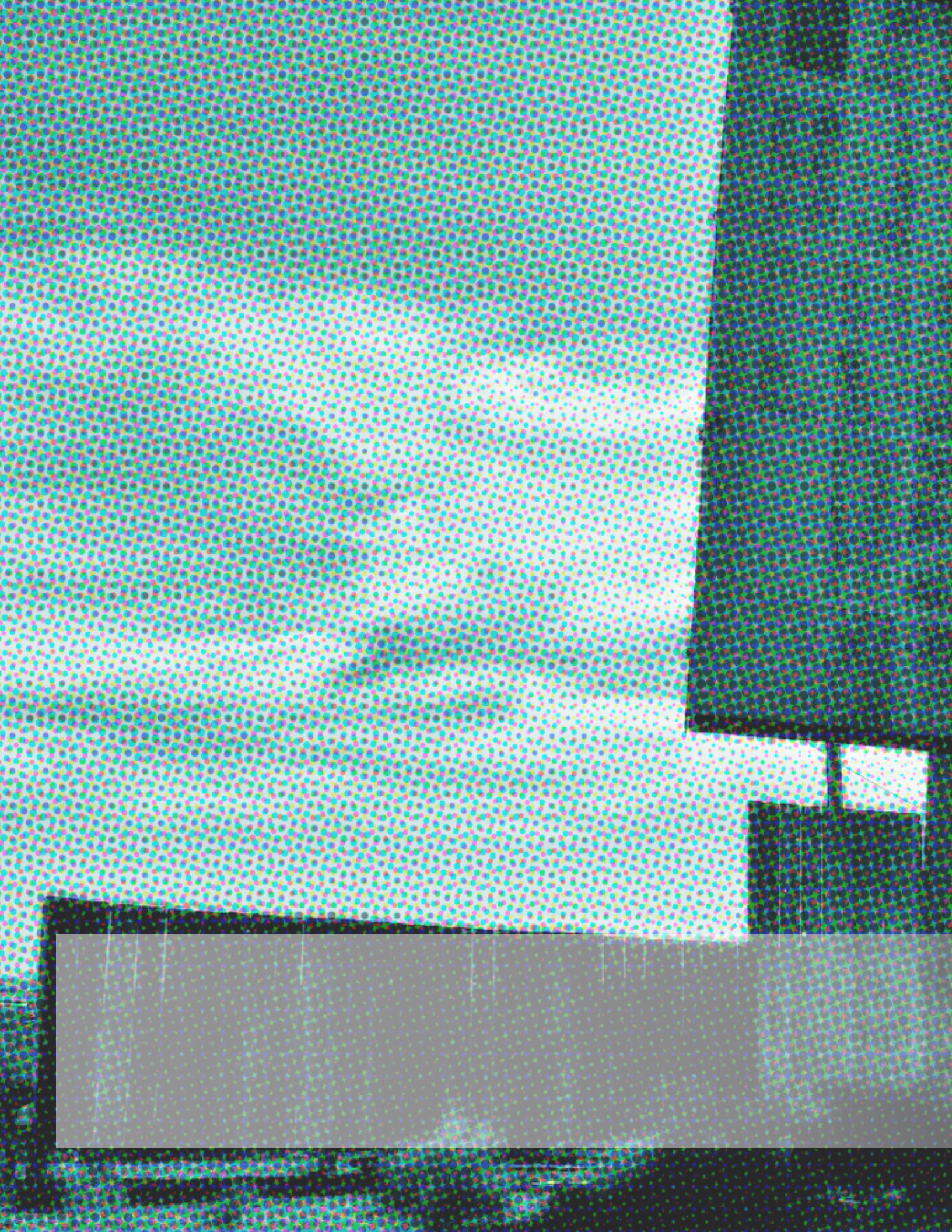
\- *-share private data*

FIGURE 1.9
Facebook pioneered a new way of keeping in touch and being in constant communication with peers.

Is the lecture hall an ideal learning environment for today's student...

when Social Media is already in the classroom?

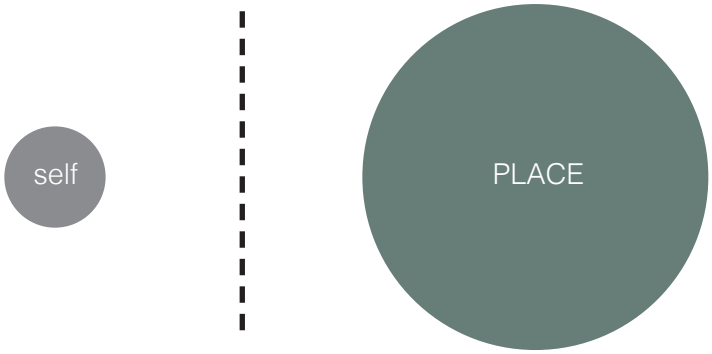
FIGURE 1.10
The student has already brought social networking into the classroom. It's time it is adopted to improve the learning process.



PLACE

The Death of Place

The importance of places in today's society is increasingly disappearing as the younger generation transition to a highly digitized social atmosphere. Once active places are now desolate. This is a condition effecting a majority of US cities as the desire to gather in public places is becoming a thing of the past.



"Our sense of place, as old as humanity, is coming to an end!"
-Marc Auge
Non-Places;Introduction to and Anthropology of Supermodernity

—

place *\'plas*

noun
a: physical environment
b: the three-dimensional compass of a material object
c. space + character
d. culture localized in time and space

PLACE

The relationship between architecture and education has always focused on the design of spaces that aim to focus our attention. There was a time when the importance of education was rooted in the physical learning environment, or "place."

dis(PLACE)

Today there is a shift occurring as students are living a new kind of life that aims to connect one another, a digital life. There is a similar shift occurring in education to accommodate our changing life styles from place based education, to online education, or distance learning. This undermines the importance of place in our education and reduces the value of architecture in education.

re(PLACE)

I seek to understand the way students interface with varying means of social media in order to design more engaging learning environments. Our classrooms need to respond to the way students are living their social lives to better suit their educational needs in order to reestablish a sense of place.

FIGURE 1.11
How can social networking inform a new sense of place?

History of Place

ARISTOTLE

topos - *feeling of belonging evoked by the "where" dimension*

ANCIENT ROME

genius loci - *"spirit of place"*

FIGURE 1.12
Places used to be the primary element for defining a person's character.

Developing a sense of place and self

FIGURE 1.13
The importance of place in the learning process varies across learning and teaching practices.

Place and Education

Research has shown that there is a direct relationship between learning environments and student performance. So the need for learning friendly places is still an effective means for the transition of knowledge. What is missing is a new type of classroom that responds to today's technology driven student. But with the incorporation of technology into the classroom in the early 1990's, there is a greater risk for distraction for students.

History of Place in Education

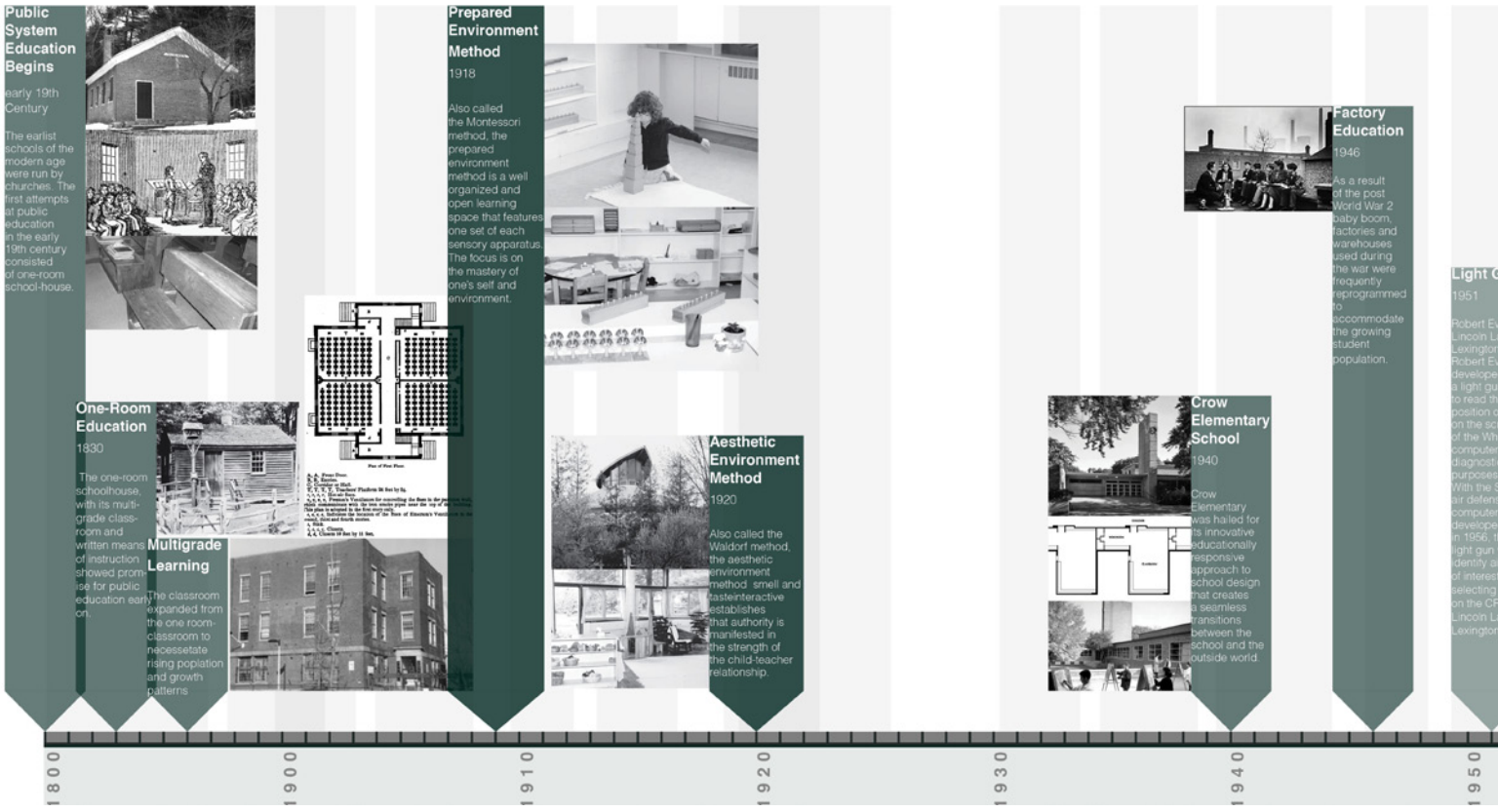


FIGURE 1.14
The importance of place is losing ground to virtual reality.

University Evolution of Place

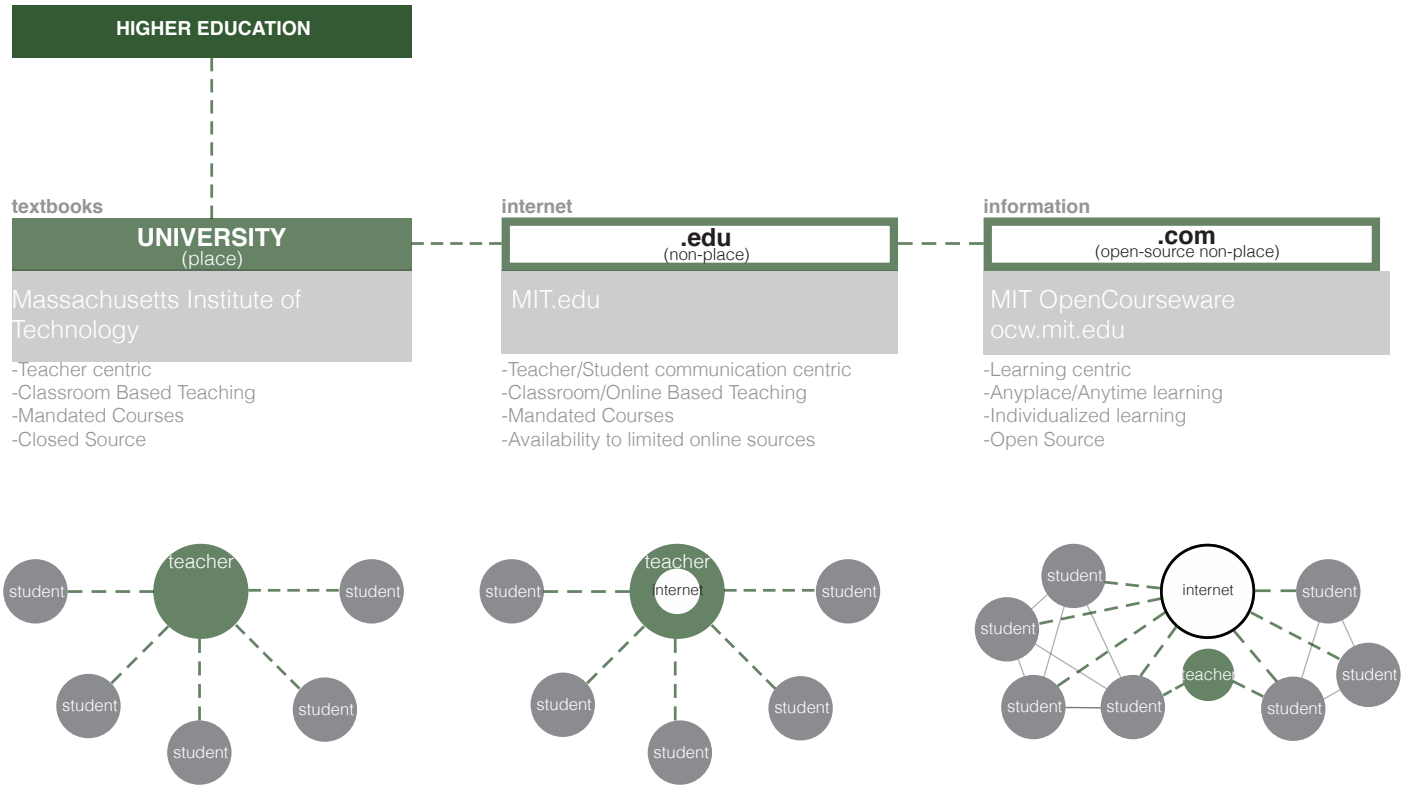
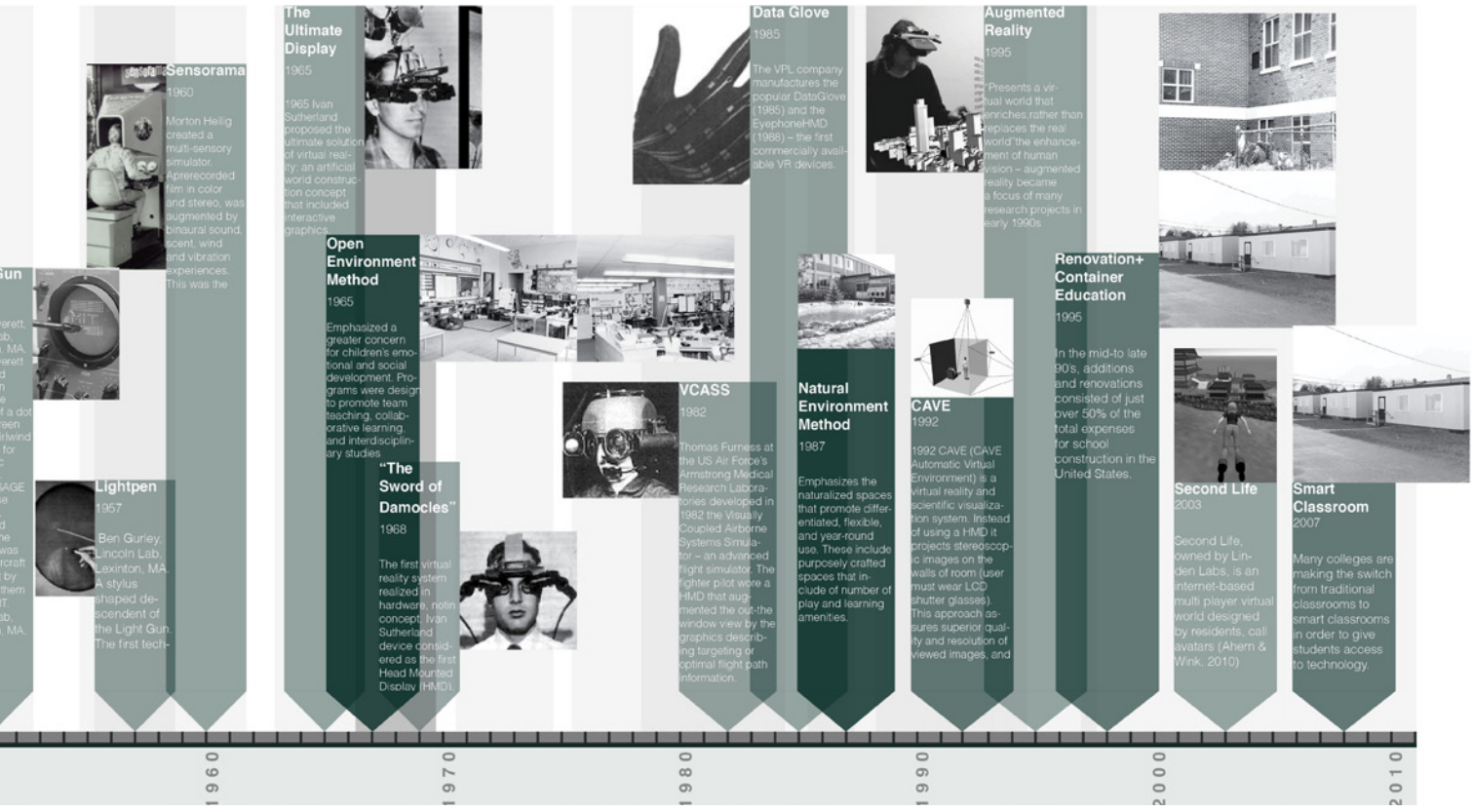


FIGURE 1.15
The role of the teacher in the classroom is becoming increasingly less significant.



Networked Place

The internet is revolutionizing the way students are not only interacting and communicating, but also the way they are learning. Information is simply a mouse click away so the flow of knowledge and information is much faster than before. As a result, for most university students, the pace of the classroom is currently way behind the pace they use on the internet.

The way we understand and relate to places in the physical world can be adopted to the internet as well. The way physical space performs functionally, whether it be a group space or personal space, can be identified with online. For instance, a place may help establish a sense of identity or belonging, so to do numerous social networking platforms such as Facebook and MySpace. The idea that digital places manifest themselves in the same way physical places do can allow for a classroom that adapts both to better relate to a younger generation of students.

Group PLACE

Behaviors: Reinforcing the identity of a self-defined group, and your position within the group, eg 'stroking' behavior to let the group share a sense of belonging, or mild competitiveness to signal hierarchies within the group etc)

Publishing PLACE

Behaviors: Creating your own content or showcasing your talents to an audience outside of your usual social group

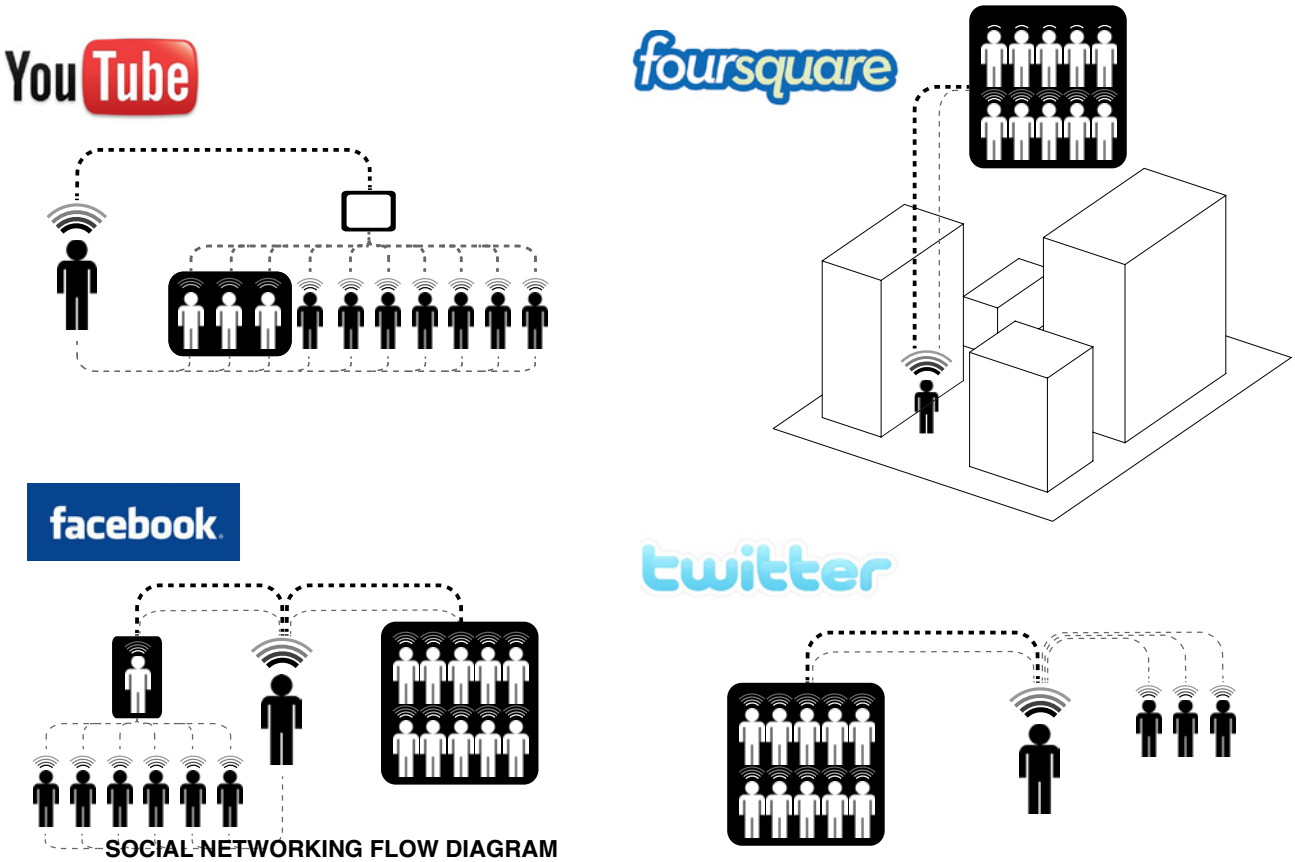


FIGURE 1.16
Social network platforms vary in their design for connecting people.

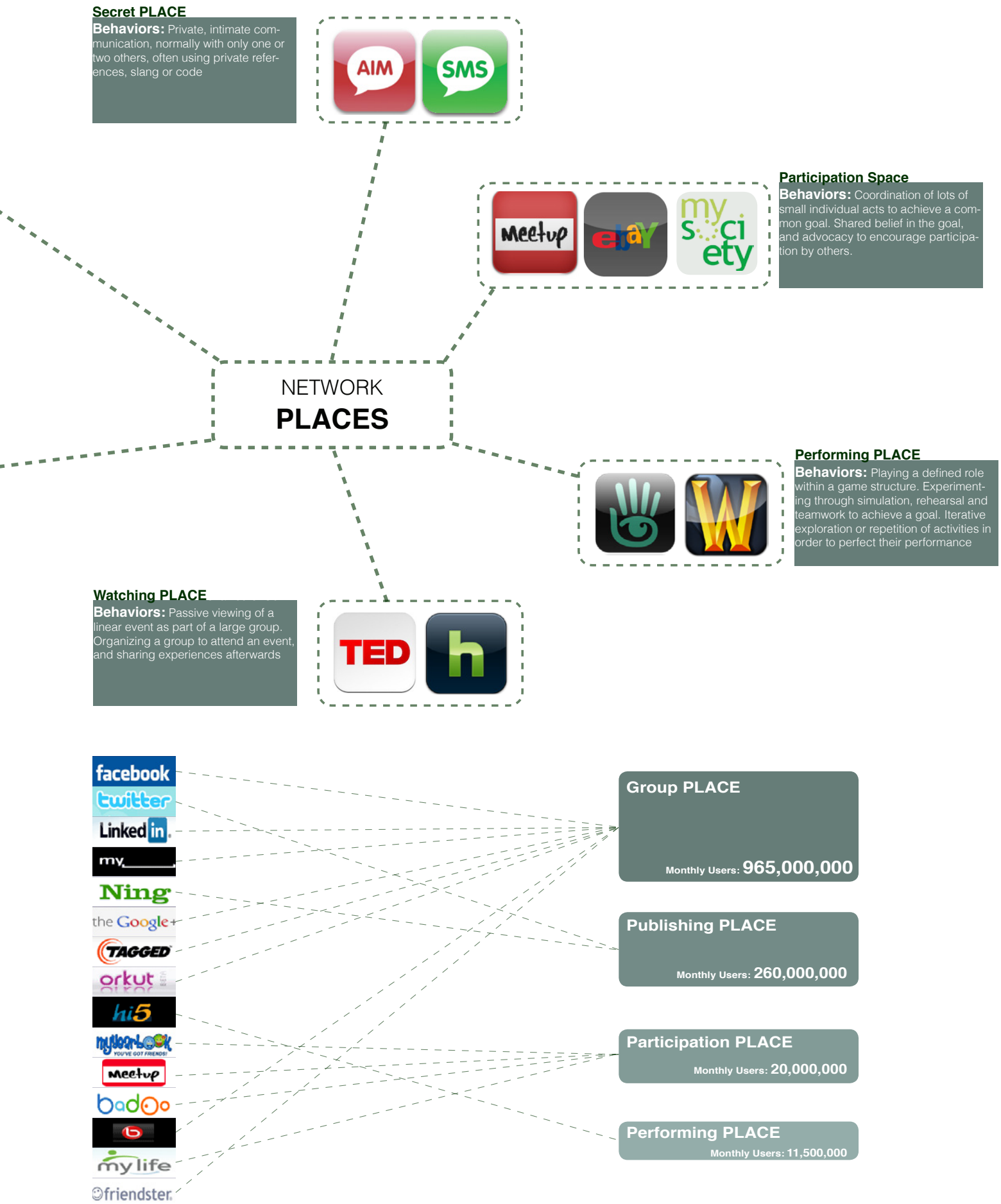


FIGURE 1.17-18

The internet isn't spatial, but instead has attributions we can relate to physical places.

PEDAGOGY

A Failing Model

By continuing the ancient teaching methodologies first used a millennia ago, the traditional place-based university is one of the least innovative places in our society. Not only is it ancient, it isn't working. Retention rates are staggeringly low for a majority of teaching methods practiced in universities today. A 21st century model that puts the student first and understands the way students today interact will ultimately prevail.

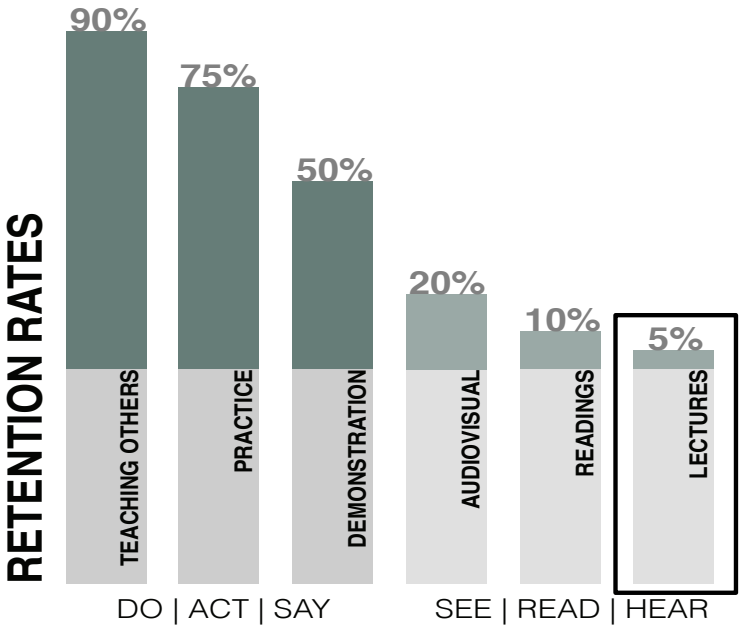


FIGURE 1.19
Established teaching methods are growing increasingly ineffective.

The Price of Education

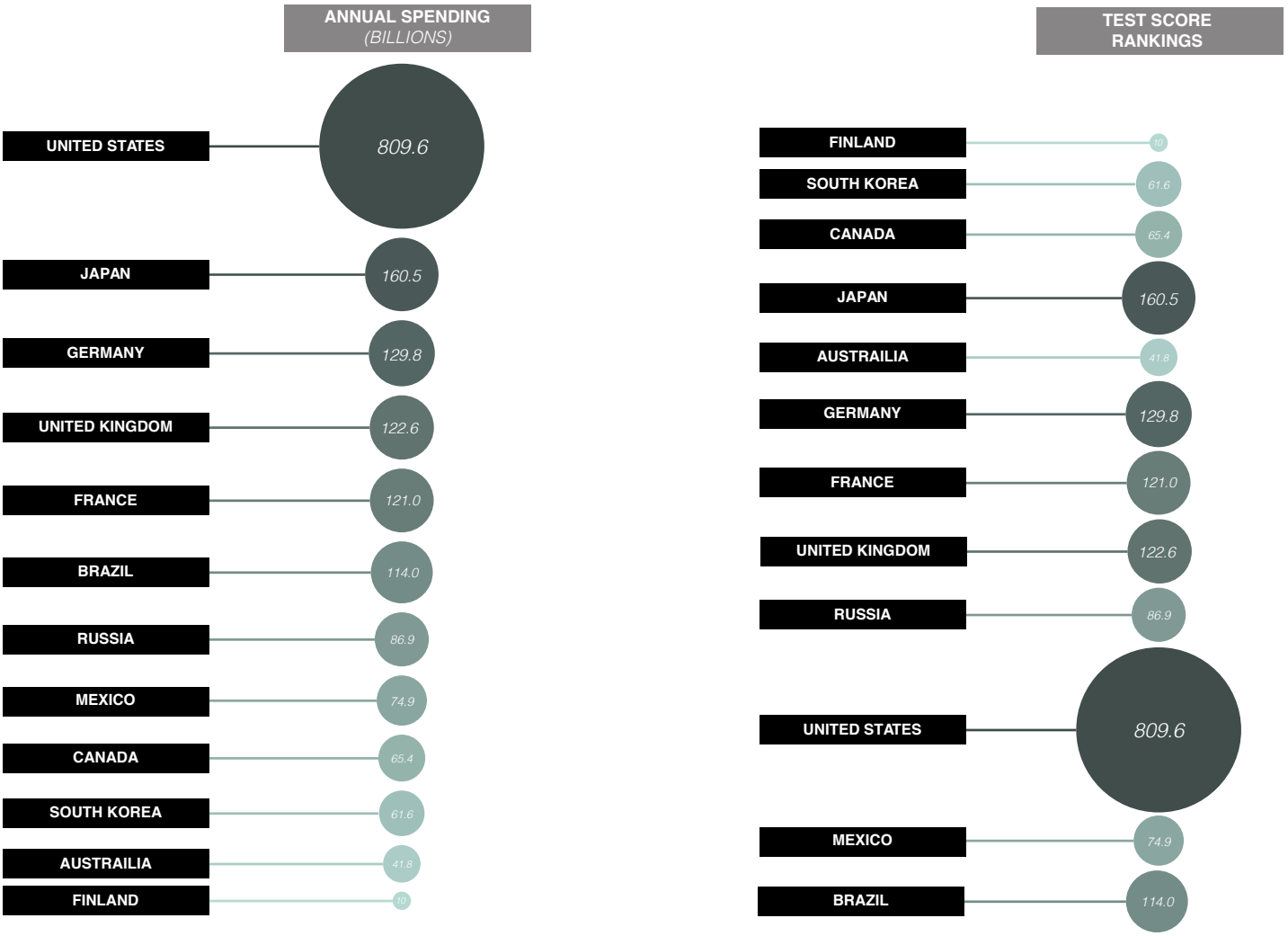


FIGURE 1.20
The financial annual costs of education are staggering compared to the results for the US.

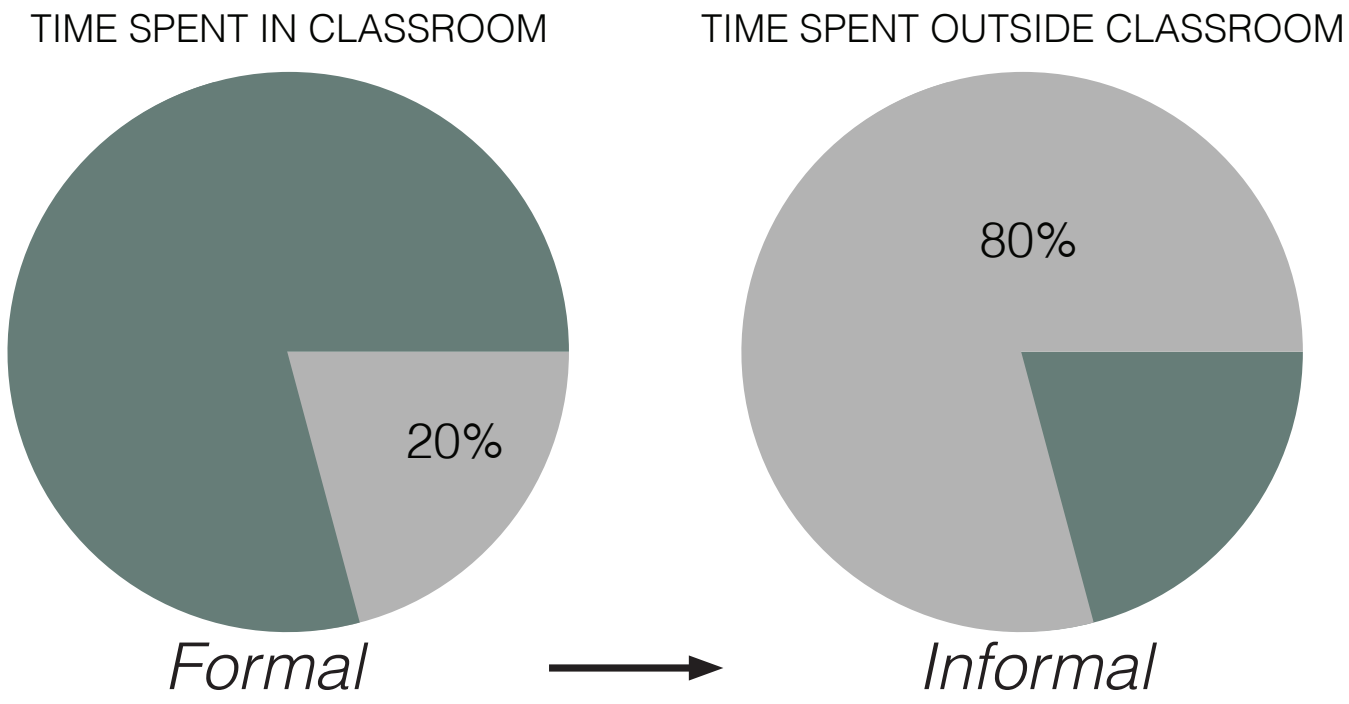


FIGURE 1.21
Learning environments are transitioning to informal settings.

Online vs. Classroom Education

FACTORS	CLASSROOM	ONLINE
Learning Community	-Smaller group sessions often encourage interaction.	-Requires instructor to add in opportunities for interaction among students.
Feedback	-Instructors often respond immediately to students.	-There are delays in providing answers when questions are asked. Instructor response time may be slower than anticipated.
Assessments	-Formal tests and papers are common.	-Tests usually offered during a larger testing window such as any time on a given day.
Discussions	-Often occur and add to interaction in the classroom.	-Allows instructor to assess quality of individual contributions.
Lectures	-Allows for immediate questions and changes for clarification purposes.	-Can be viewed at a time that is convenient for the learner.
Logistics/Pace	-Set place/Set location. Instructor typically controls the pace of the classes.	-Student determines the time of day and location for participating in activities.

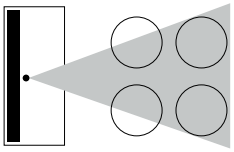
FIGURE 1.22
Online education is challenging the institutional model.

PEDAGOGY

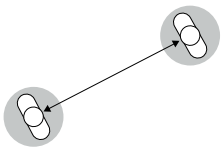
Educational Spaces

Learning environments are no longer confined to the walls of our classrooms, but instead go beyond to include the city as a whole. As future learning models such as interdisciplinary learning and mobile learning take precedent over traditional teacher-centered methods, new learning approaches are required in order to address today's social networking student.

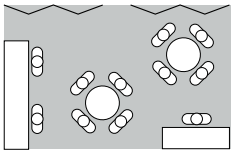
Delivery
-instructor controls presentation
-focus on presentation
-passive learning



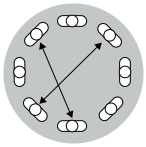
Applying
-controlled observation
-active learning



Creating
-multiple disciplines
-leaderless/egalitarian
-casual/active learning/research



Communicating
-knowledge is dispersed
-impromptu delivery
-organise information



Decision making
-information is shared
-leader sets final direction
semi-formal to formal/decision making

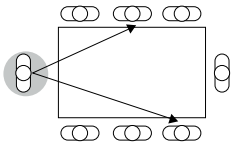


FIGURE 1.23
Pedagogy is changing, but the classroom is yet to adapt.

EDUCATIONAL INSTITUTIONS

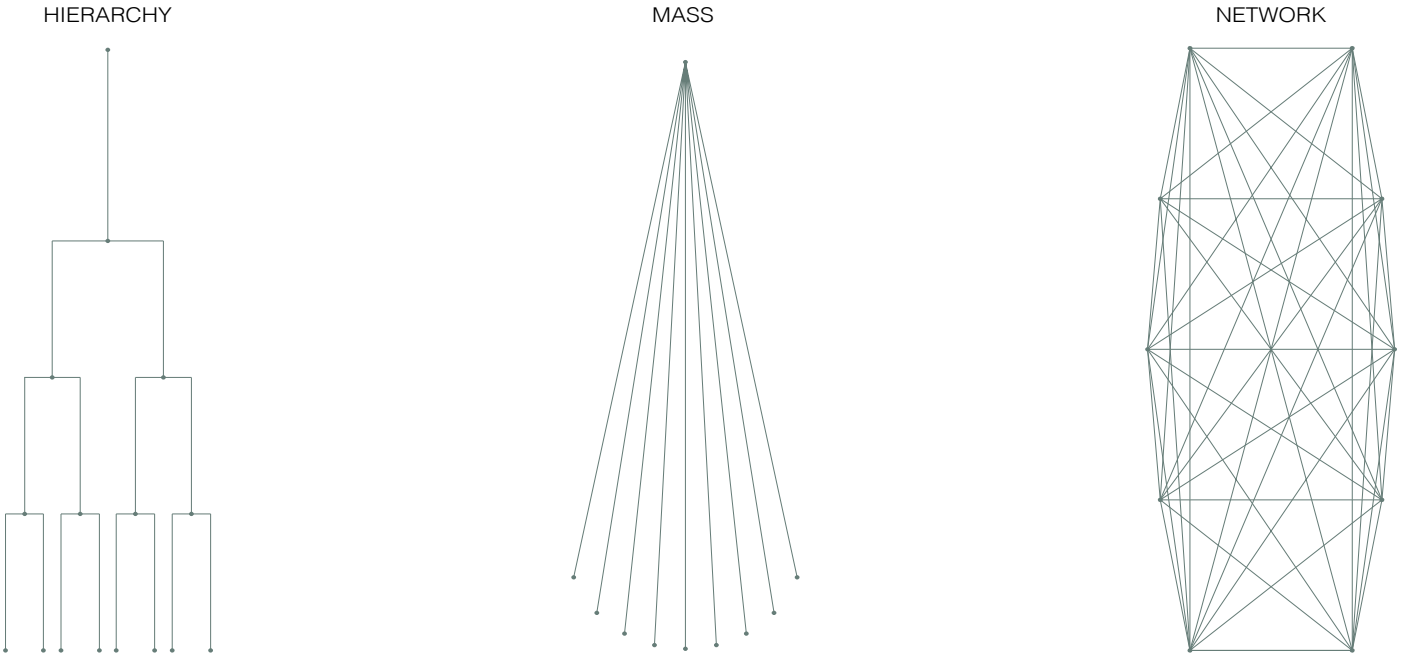
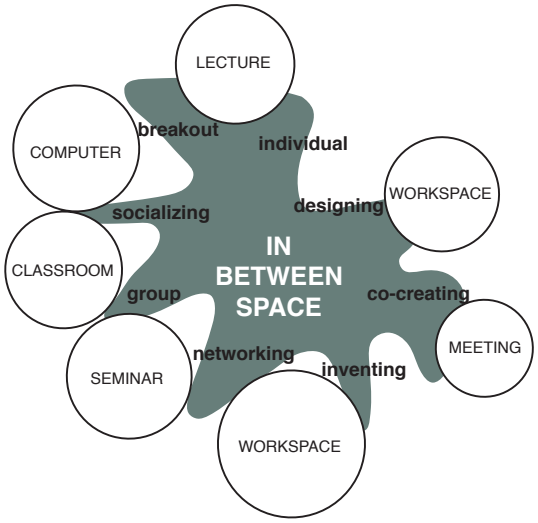


FIGURE 1.24
The institutions of the future will transition from a hierarchical model to a network model.

Present University Learning Approach

Informal/Social Model



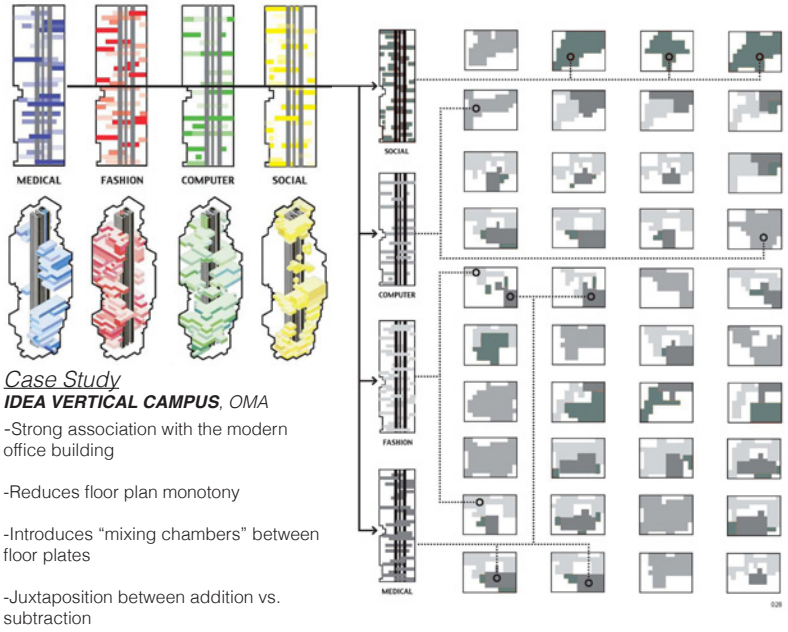


FIGURE 1.25
Social spaces are becoming as important as classroom spaces.

Structure → **Process**

Strategy → **Purpose**

System → **People**

FROM hierarchical configuration and fixed coordination mechanisms **TO** self process-based organization

FROM strategy design for value appropriation **TO** responsibility and commitment for value creation

FROM centralized decision making **TO** empowered people

Learning Environments

What makes a good learning environment?

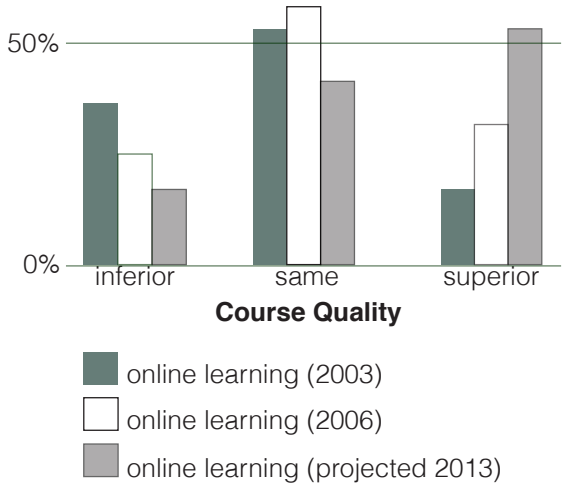
Physical Factors

VISUAL	AURAL	BEHAVIOR	EXTERNAL	INTERNAL
Visual stimulation can negatively effect a learning environment	Noise in the classroom is shown to distract and impede learning	Social behavior has been shown to enhance the learning process	External factors such as weather can distract from learning	Internal factors such as desks can influence cognition

FIGURE 1.26
Physical factors play a key role in determining the effectiveness of a learning environment.

Distance Learning Model

Studies show effective learning requires interactive environments. The level of interaction online is growing to the point where the effectiveness of learning online is equal to that of learning in a physical place among young children. The youth generation is one of devices that extend our selves beyond the physical world, so the need for digital learning places will help students relate and achieve an education more suitable to them.



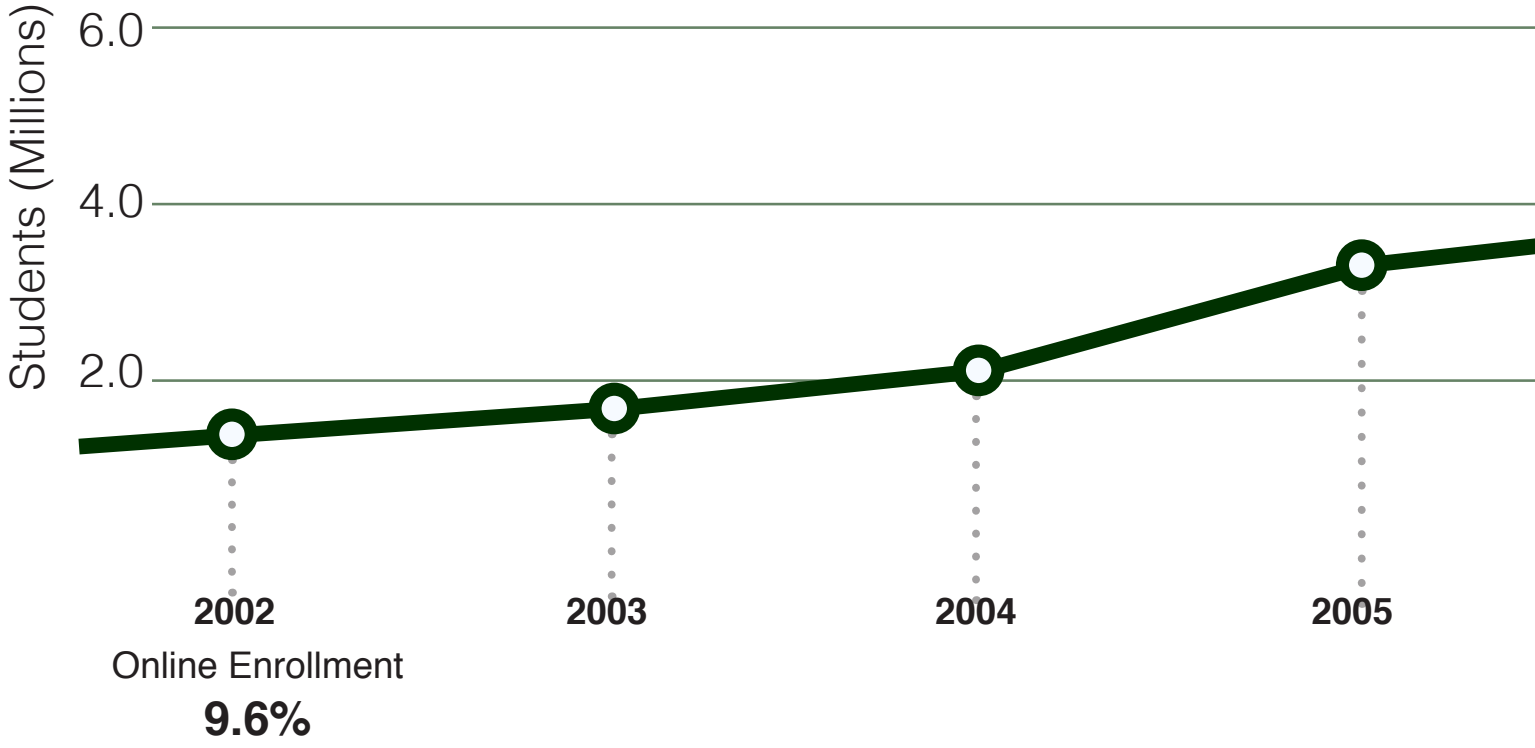
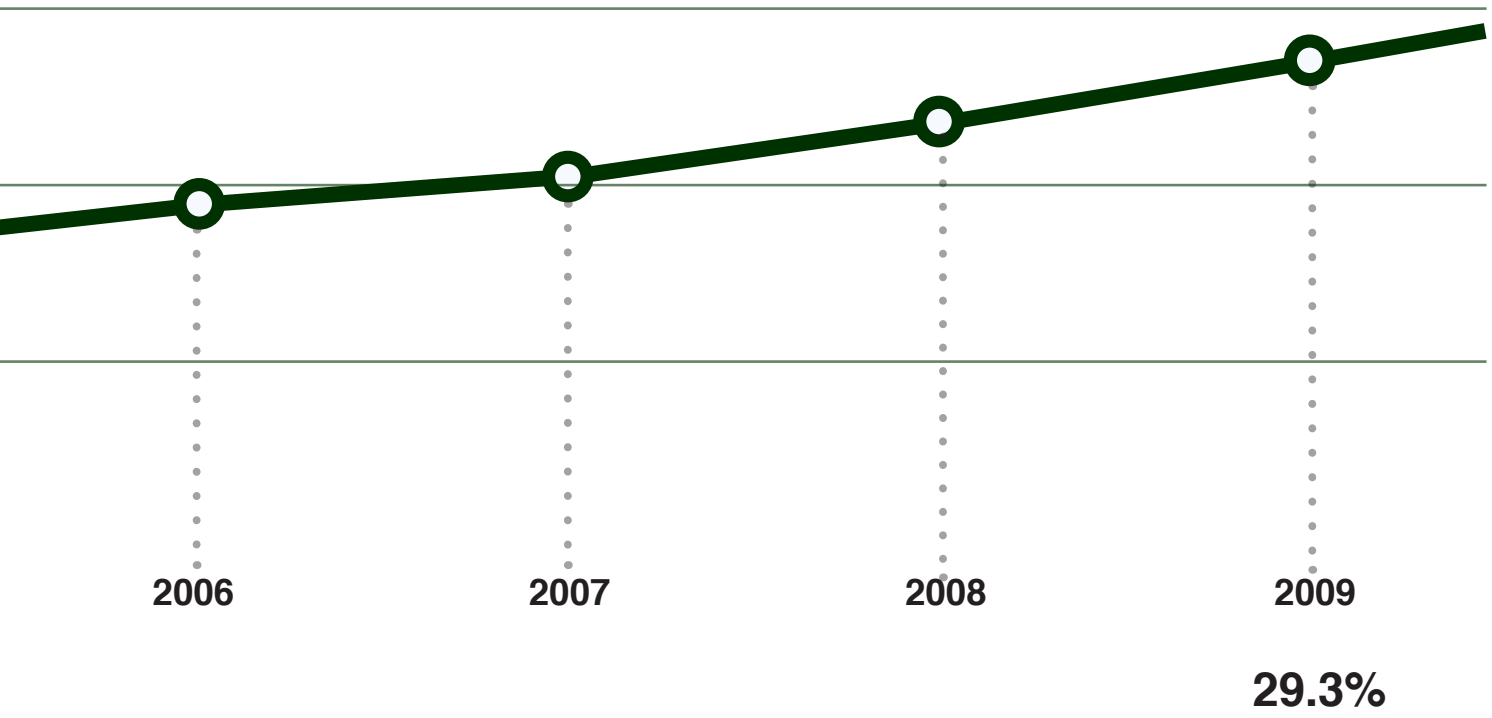


FIGURE 1.27
Online education is growing at a steady rate, unlike physical education.

traditional education is growing by ***1.2%***

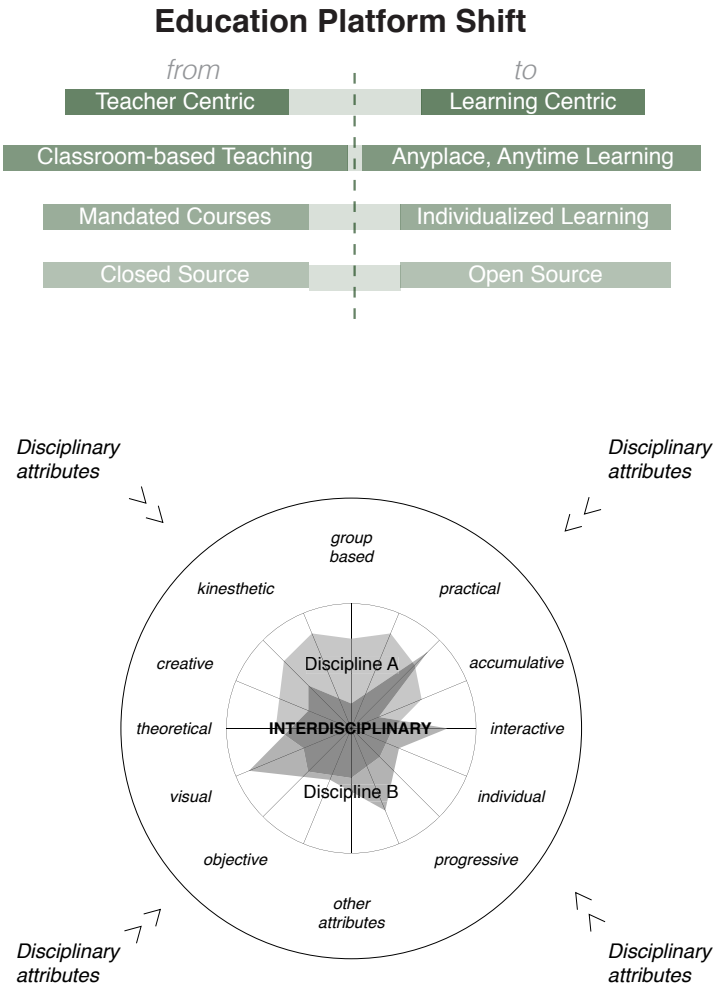
annually while online education is growing by ***17%*** *annually.*



PEDAGOGY

Platform Shift

The shift occurring in today's universities is one where the role of the teacher is increasingly moving towards the periphery and the internet is assuming the role of primary information resource. Open source software is allowing information to be freely accessible so the need for place-based education is slipping away, and the university is proving slow to respond.



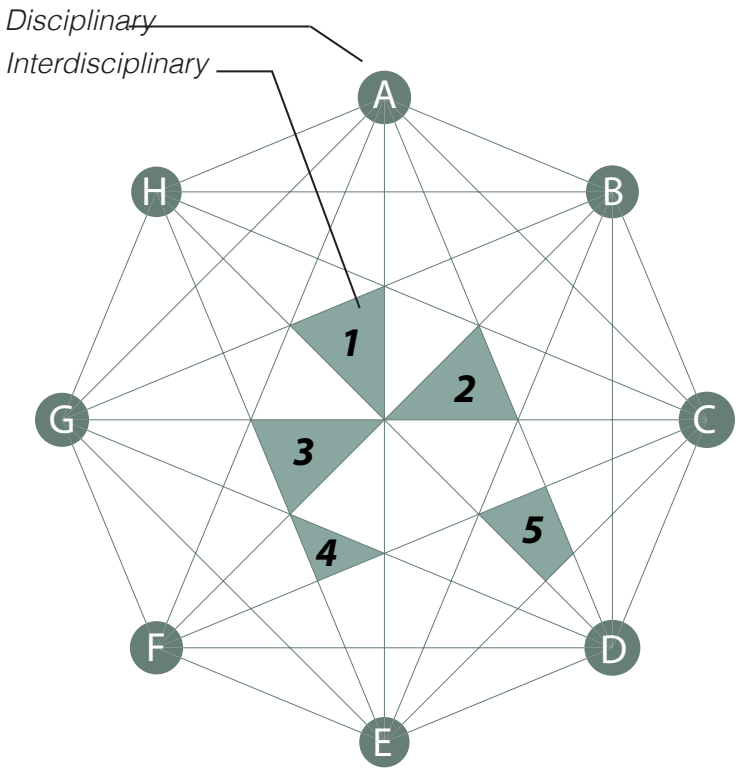
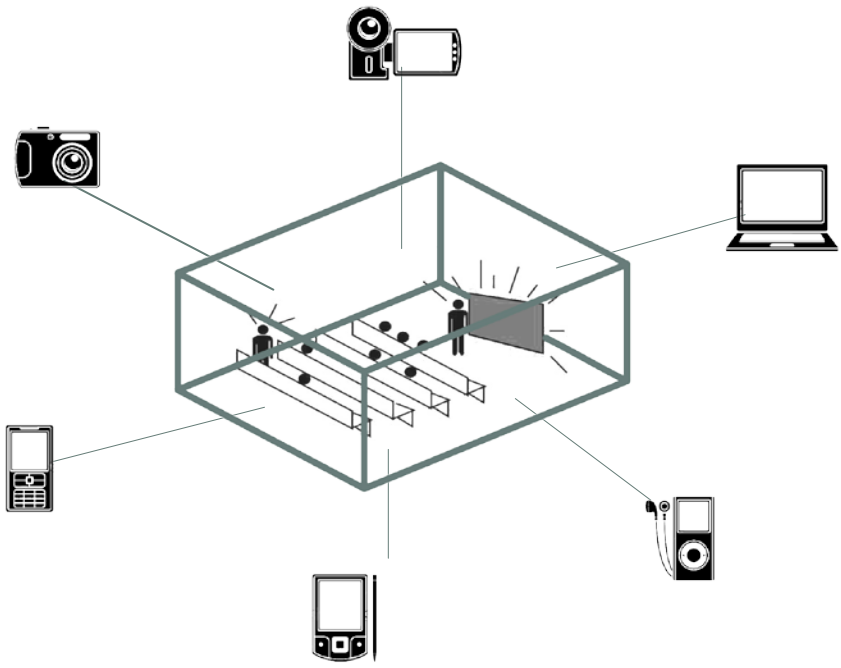


FIGURE 1.28
The global market is one that requires a need for interdisciplinary studies.

Future Learning Approaches



Mobile Learning Model

Advantages of Mobile Learning

Interaction	-student interaction with instructors and among each other.
Portability	-enable the student to take notes or input data directly into the device regardless of location either typed, handwritten or using voice.
Collaborative	-enables several students to work together on assignments even while at distant locations.
Engaging Learners	-the new generation likes mobile devices such as PDAs, phones and games devices.
Increase Motivation	-ownership of the handheld devices seems to increase commitment to using and learning from it.
Bridging the Digital Divide	-since handhelds are more affordable than larger systems they are accessible to a larger percentage of the population.
Just-in-Time Learning	-increases work/learning performance and relevance to the learner.

FIGURE 1.29
Mobile Learning is creating a more actively engaged student learner.

TYPOLOGY

Urban vs. Rural

The earliest rural universities were designed as places set apart from the city. This created an inherently inward thinking model that is still encouraged by most universities today. However, with open source software and the internet making information widely available today, the role of the university shouldn't be to look inward, but instead to engage its local community and make its services more accessible to not only local students, but students internationally.

Universities in an urban context traditionally are shaped by growth as they sprawl to absorb adjacent site locations. So engaging not only the local student population but the city as a whole increases the importance of a university in an urban context.

PENN STATE UNIVERSITY

ESTABLISHED:	1855
ENROLLMENT:	43,252
# OF CAMPUSES:	24
# OF SCHOOLS:	N/A
LAND AREA:	5,448 acres

NEW YORK UNIVERSITY

ESTABLISHED:	1831
ENROLLMENT:	50,917
# OF CAMPUSES:	6
# OF SCHOOLS:	16
LAND AREA:	229 acres

FIGURE 1.30
Rural universities are more inward thinking, while urban universities engage their local context.

Prior Typologies

Previous classrooms emphasized the relationship between the student and the teacher and failed to recognize the importance of group/ shared learning. Prior to 1950, social spaces weren't included in the design of educational buildings. This was because of the belief that acquired knowledge could only be achieved in the classroom, but the internet is proving this not to be the case anymore. Knowledge is increasingly mobile, ubiquitous, and easily accessible.

The inclusion of social spaces within the education typology freed up the monotony of the classroom typology and allowed for increased opportunities for student interaction. Although it allows for improved student interaction, this model is highly inefficient where for every 3.7 meters of allocated space, only 1 meter is deemed efficiently used meaning it receives more than 6 hours of use per school day. What is needed clearly is a model that improves this by creating spaces that can adapt from classroom spaces to social spaces on demand.

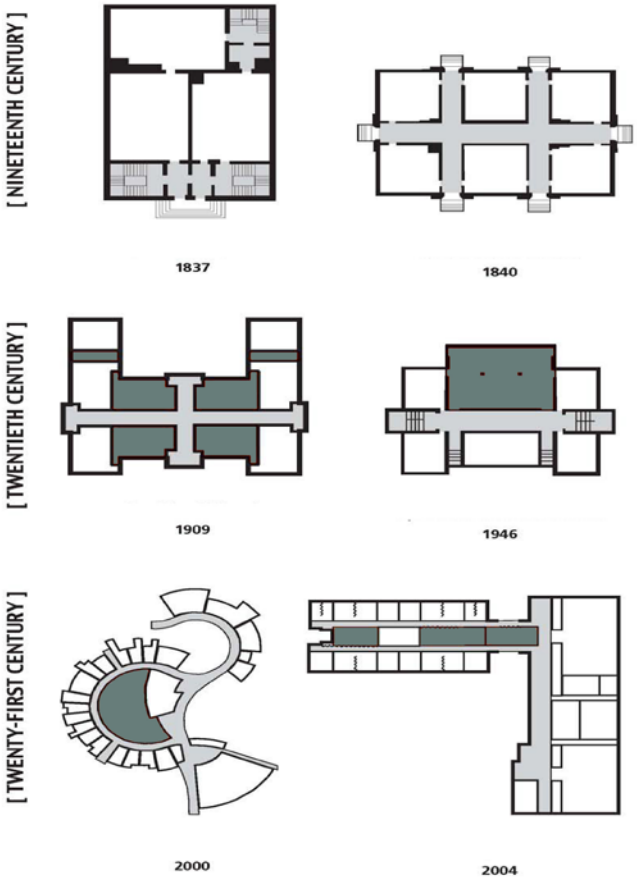
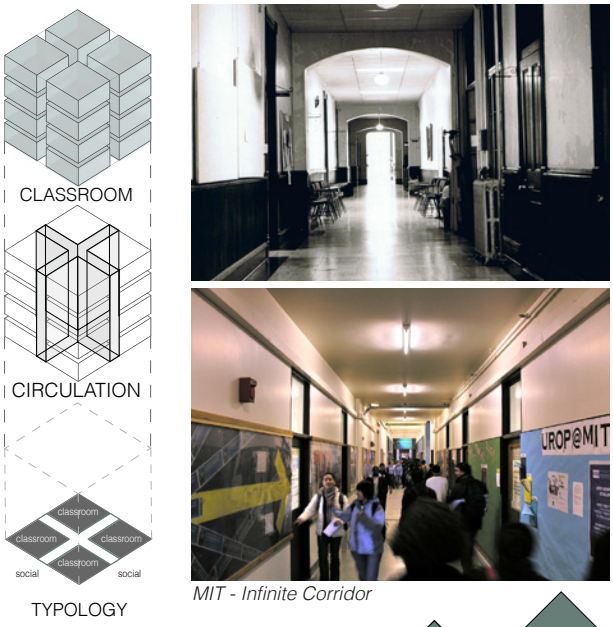
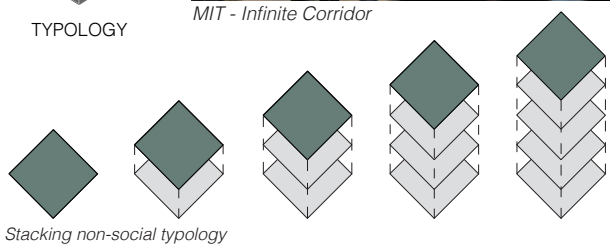


FIGURE 1.31
Open space learning is now an important part of the educational building typology.

***Non-social spatial typology**- pre-1950's*

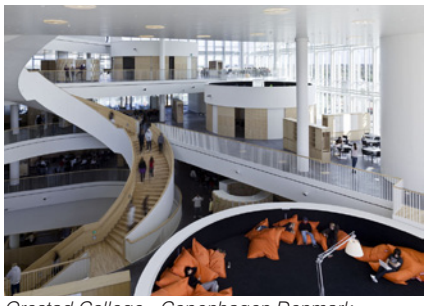


MIT - Infinite Corridor

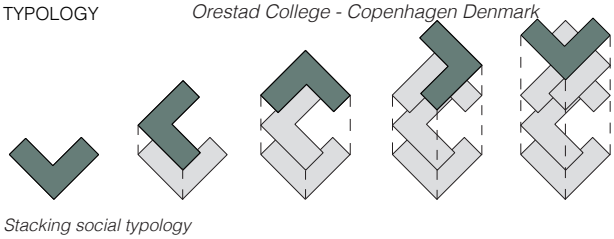


Stacking non-social typology

***Social spatial typology**- post-1950's*

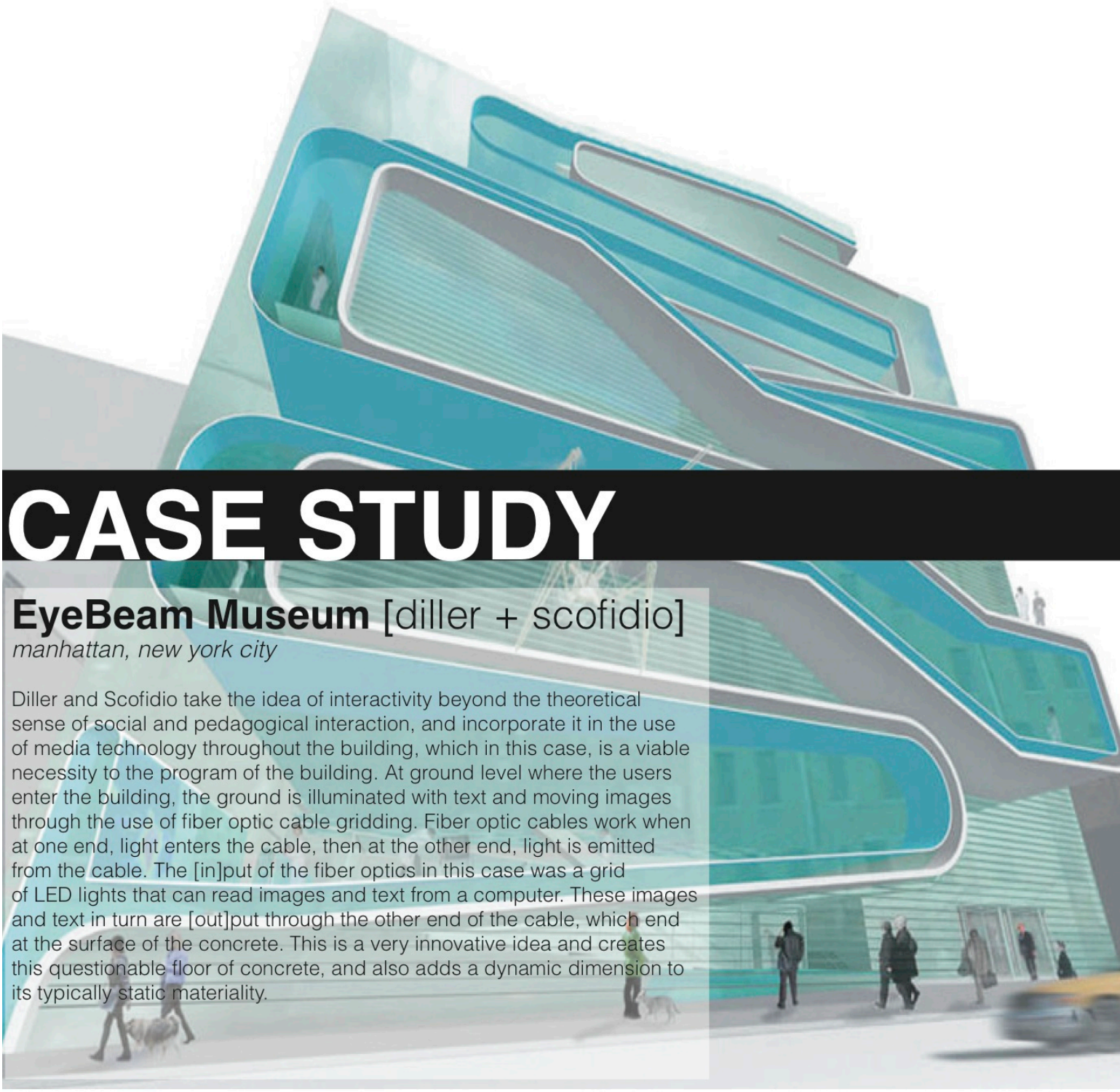


Orestad College - Copenhagen Denmark



Stacking social typology

FIGURE 1.32
The social spatial typology improves student interaction.

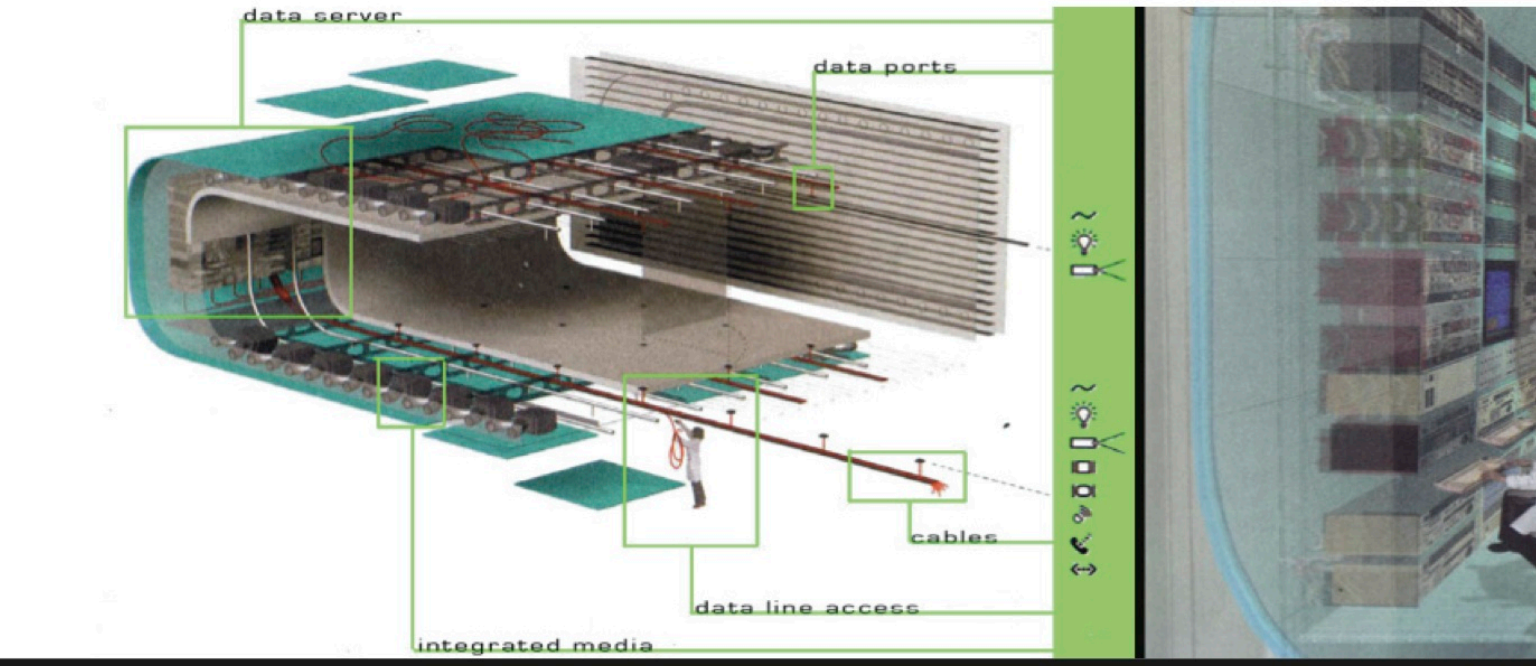


CASE STUDY

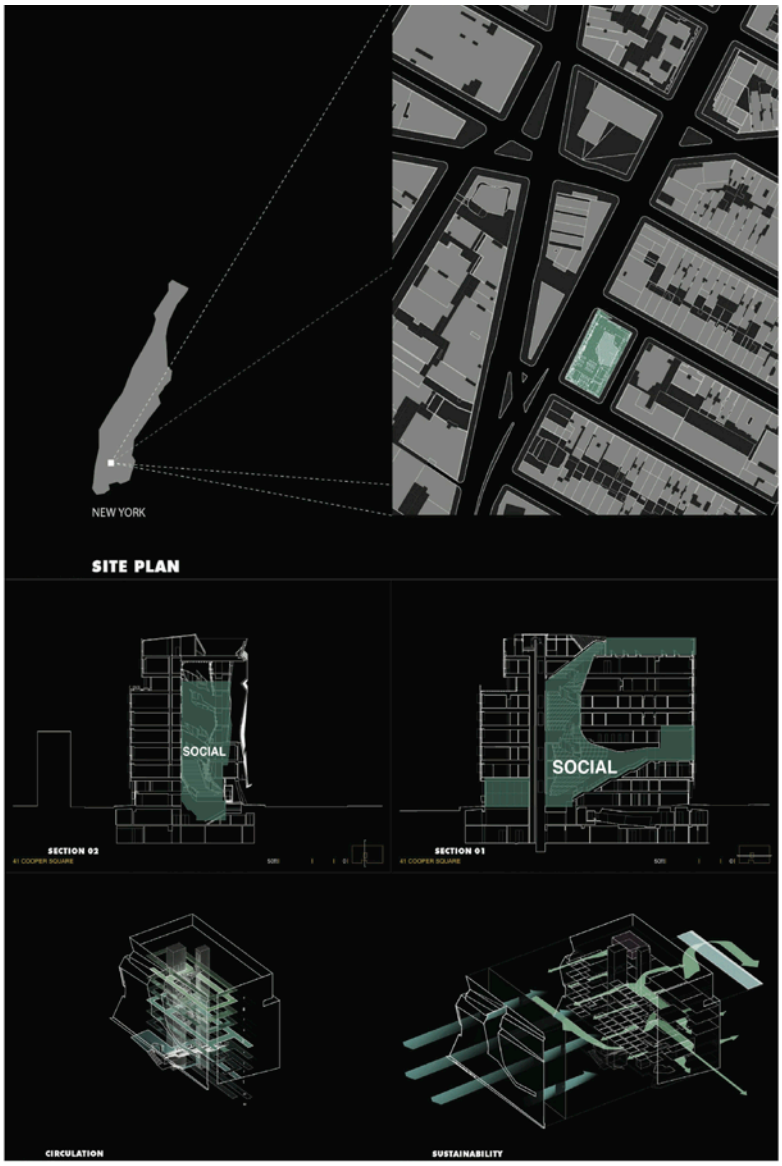
EyeBeam Museum [diller + scofidio]

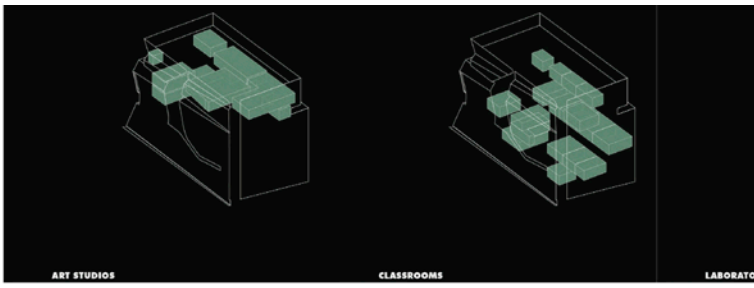
manhattan, new york city

Diller and Scofidio take the idea of interactivity beyond the theoretical sense of social and pedagogical interaction, and incorporate it in the use of media technology throughout the building, which in this case, is a viable necessity to the program of the building. At ground level where the users enter the building, the ground is illuminated with text and moving images through the use of fiber optic cable gridding. Fiber optic cables work when at one end, light enters the cable, then at the other end, light is emitted from the cable. The [in]put of the fiber optics in this case was a grid of LED lights that can read images and text from a computer. These images and text in turn are [out]put through the other end of the cable, which end at the surface of the concrete. This is a very innovative idea and creates this questionable floor of concrete, and also adds a dynamic dimension to its typically static materiality.


data server
data ports
cables
data line access
integrated media

TYPOLOGY





1. How many students attend The Cooper Union?

1000
175 in The Irwin S. Chanin School of Architecture,
250 in The School of Art
550 in The Albert Nerken School of Engineering.
50 students in graduate engineering program.

2. What is the size of a freshman class?

20-35 in Architecture
65 in Art
120 in Engineering.

3. How many students apply and how many of those are accepted?

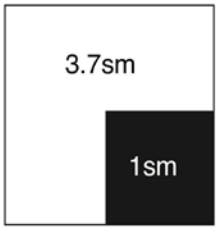
3,500 applicants (900 Architecture; 1,400-1,500 Art, and 1,100 for Engineering
275 admitted students (35 in Architecture, 65 in Art and 175 in Engineering).

4. How much does it really cost to attend The Cooper Union?

Tuition for the academic year 2011–2012 is $37,500.

Mandatory student fees (totaling $1,650 per year)
Room and board (about $14,000 per year)
Books and supplies (about $1,000-1,800 per year)
General living expenses (about $2,000-3,000 per year)
totaling approximately $20,000 per year.
In addition, international students are assessed a $1,850/year filing fee. All students must prove medical insurance coverage or participate in our medical insurance plan for a health services fee of approximately $1,466/year.

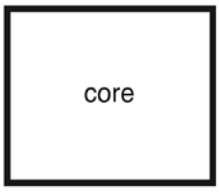
Space Utilization



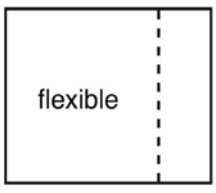
3.7 square meters provided
1.0 square meter used
27 percent utilization

-Thesis is about creating a better model that maps the dynamic space/time patterns through the academic cycle.

Space Planning Model

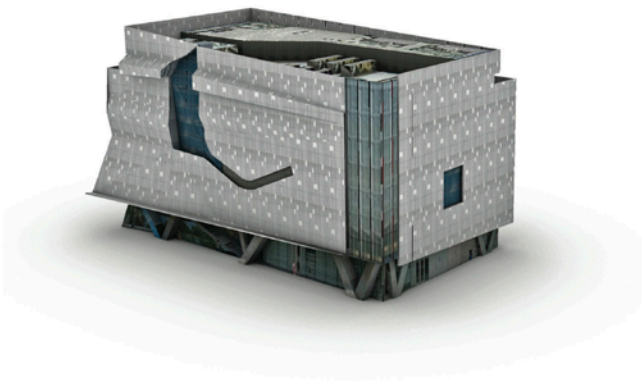


Core tends to be owned by courses

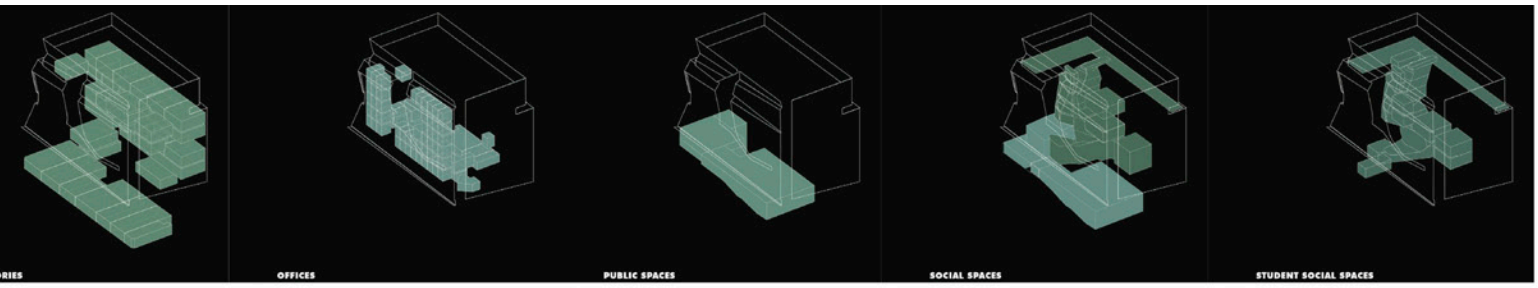


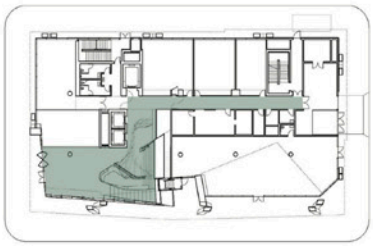
Flexible is bookable

on-demand is freely available.

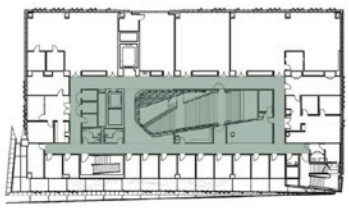


01 Cooper Union Facade

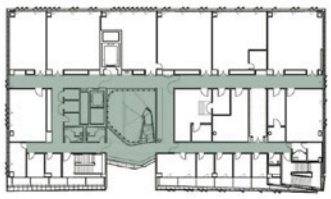




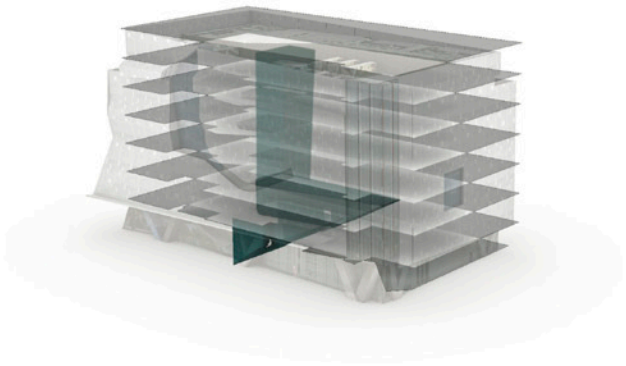
PLAN 01



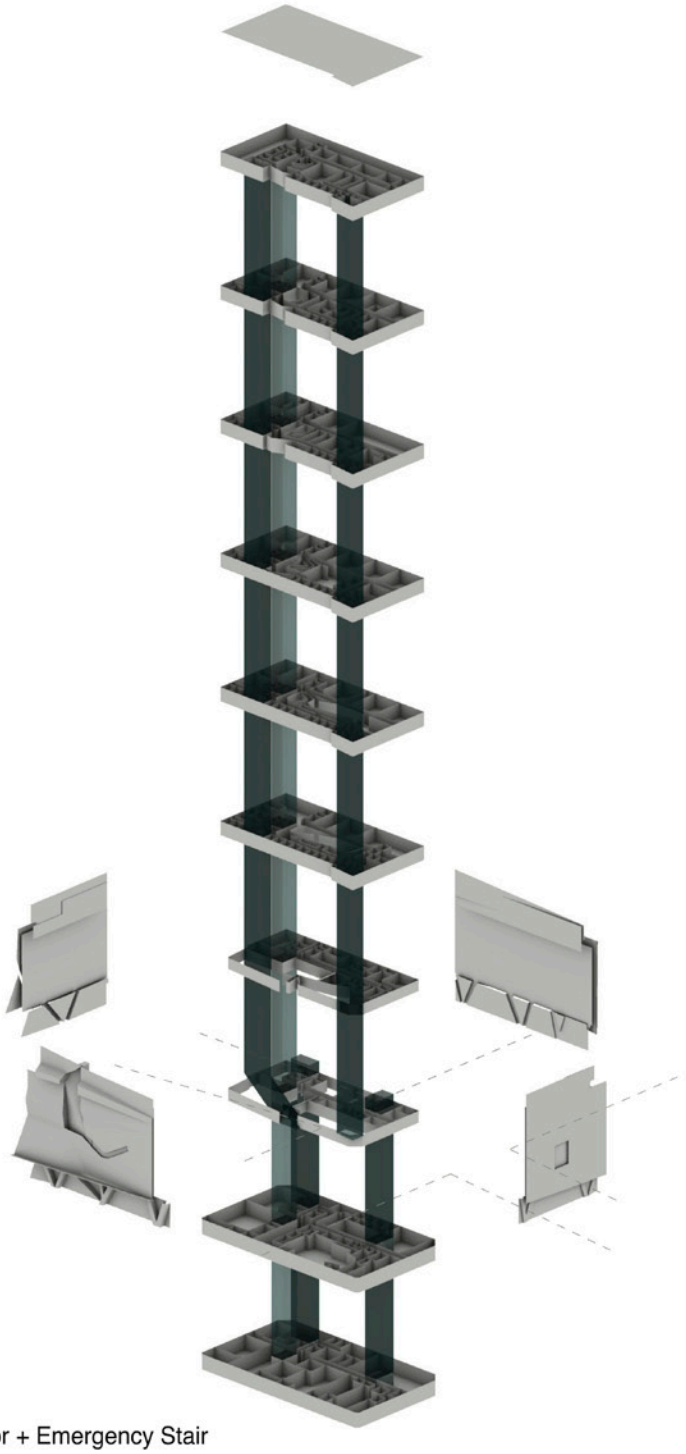
PLAN 03



PLAN 07



02 Interior Stair Circulation



03 Elevator + Emergency Stair

TYPOLOGY

Networking Classroom

The real power that lies within the infrastructure of social networking platforms is the ability for users to control and create their own experience. Therefore, new educational environments should afford students the ability to do the same. A new prototype is required that is therefore able to make the communication network visible in a space.

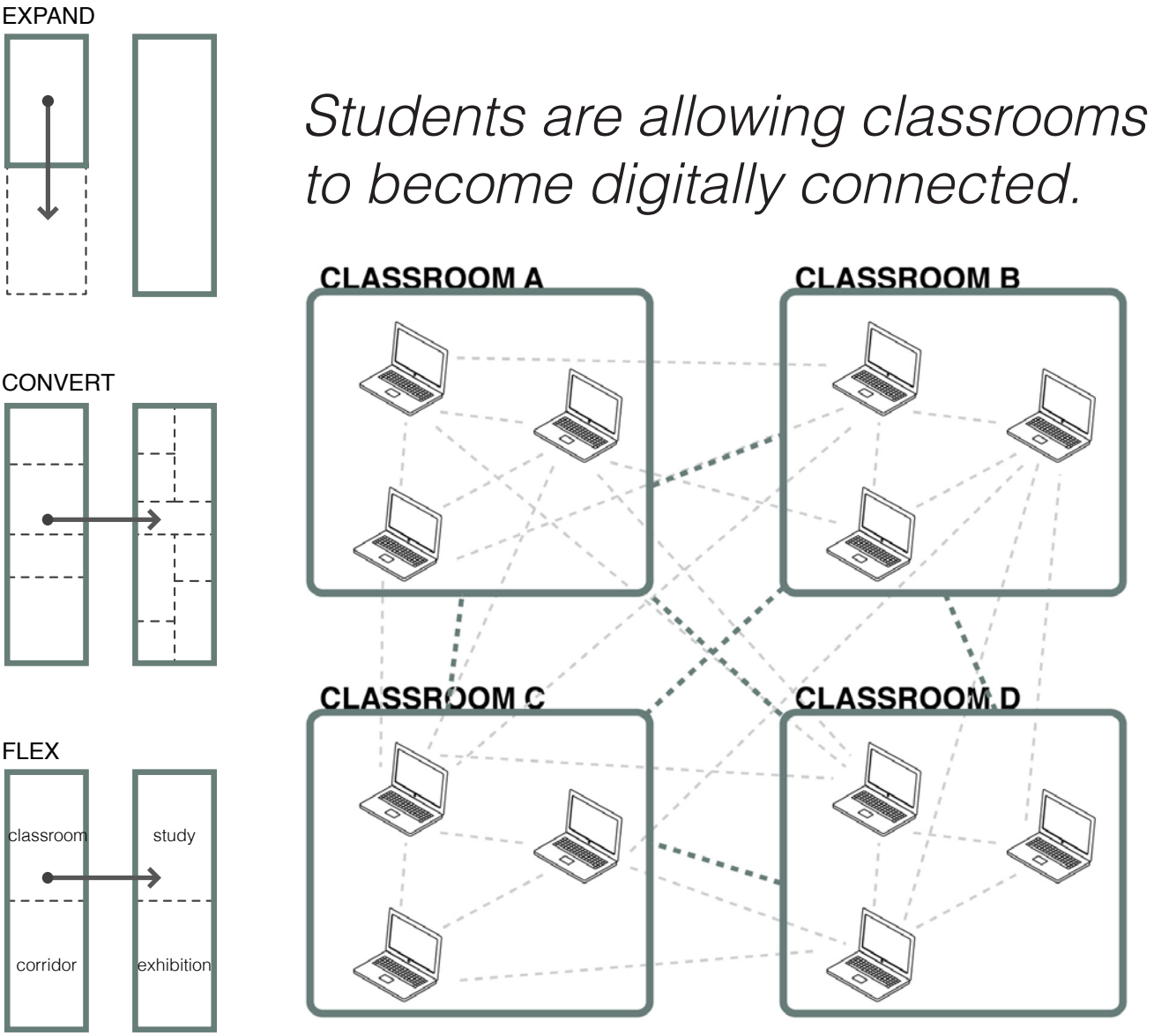
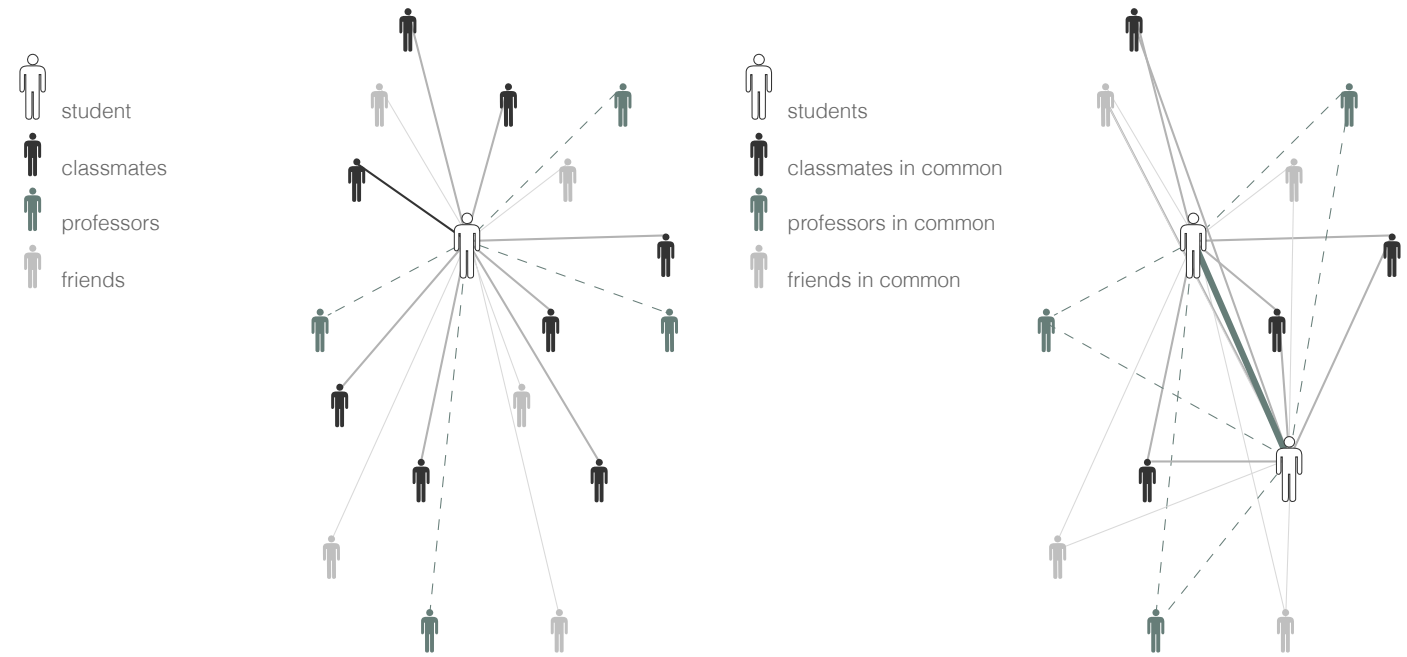


FIGURE 1.33

Adaptive learning environment model.



The educational institution has become a network of classrooms.

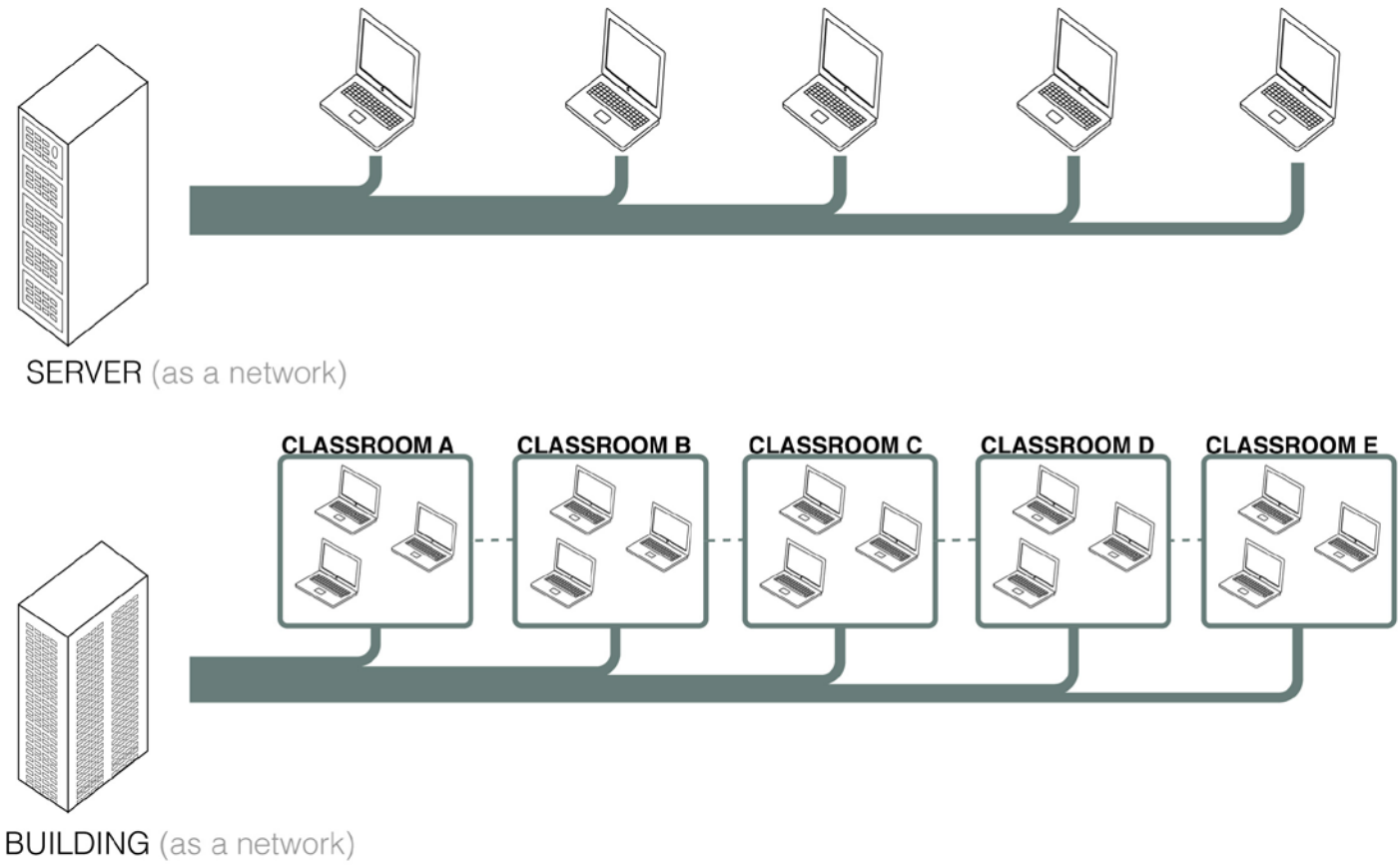


FIGURE 1.34
Classroom network model.

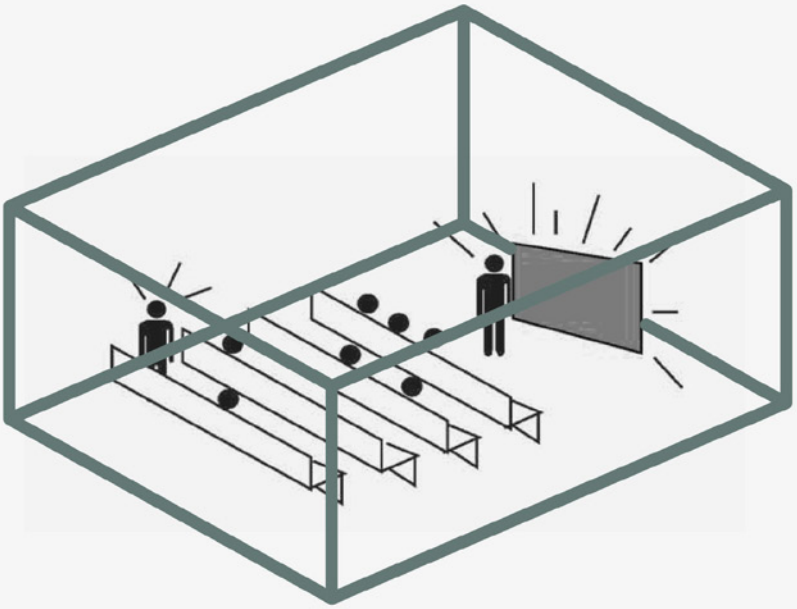
TYPOLOGY

Blurring the Edge

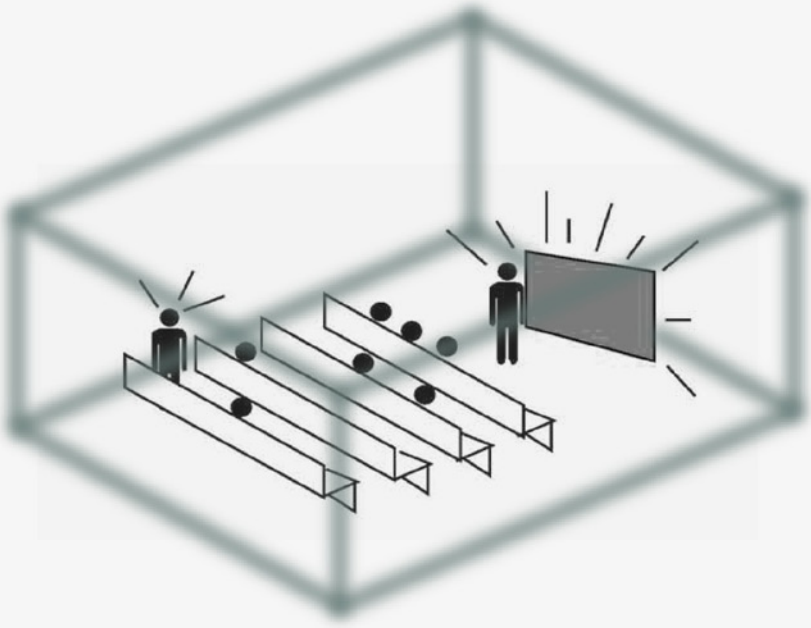
School buildings have increasingly turned their focus inward, protecting themselves against the exterior world even though the learning process has become a continuous cycle. The introduction of social spaces into the educational building helped facilitate new connections between students.

The ability for today's student to connect outside the classroom while being present within one is redefining the classroom and challenging the idea that a classroom is a "container for knowledge." The edges of the classroom are becoming increasingly blurred and so the bounded classroom is now becoming boundless. This repositions the idea of a classroom being place specific and maintaining one function, but instead a new classroom is being created single handedly on the part of the student. One where the function of the classroom is now in the control of the student.

Traditional Teaching Model



Boundaryless Model



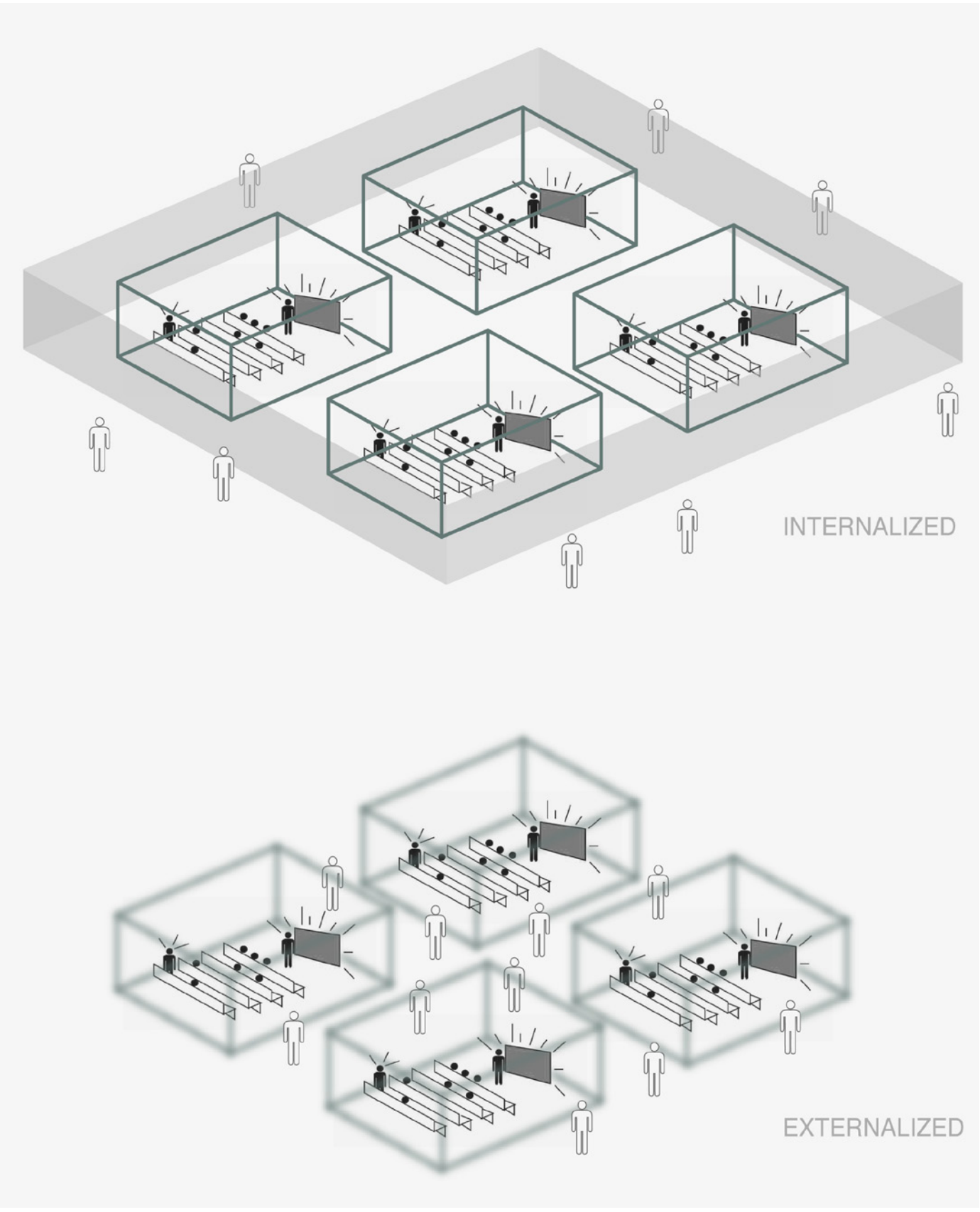


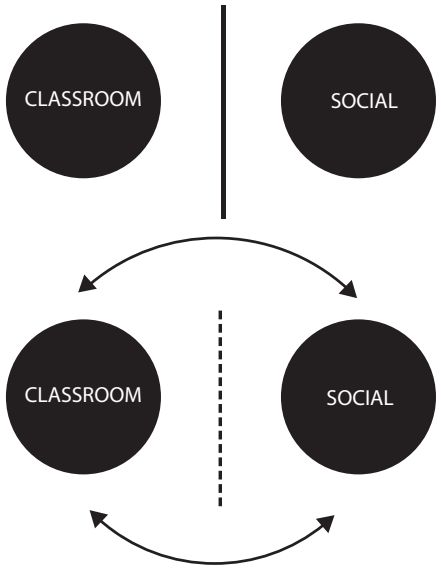
FIGURE 1.35

Boundless classroom typology

TYPOLOGY

Social/Classroom Paradigm

The relationship between social and classroom spaces is being shifted where a student, with the use of a computer of mobile phone is able to re-program a classroom into a social space. So instead of a static model, the relationship between social and classroom spaces is an adaptable one which functions to improve efficiency, adapt to meet the needs of the student, and improve communication across disciplines.



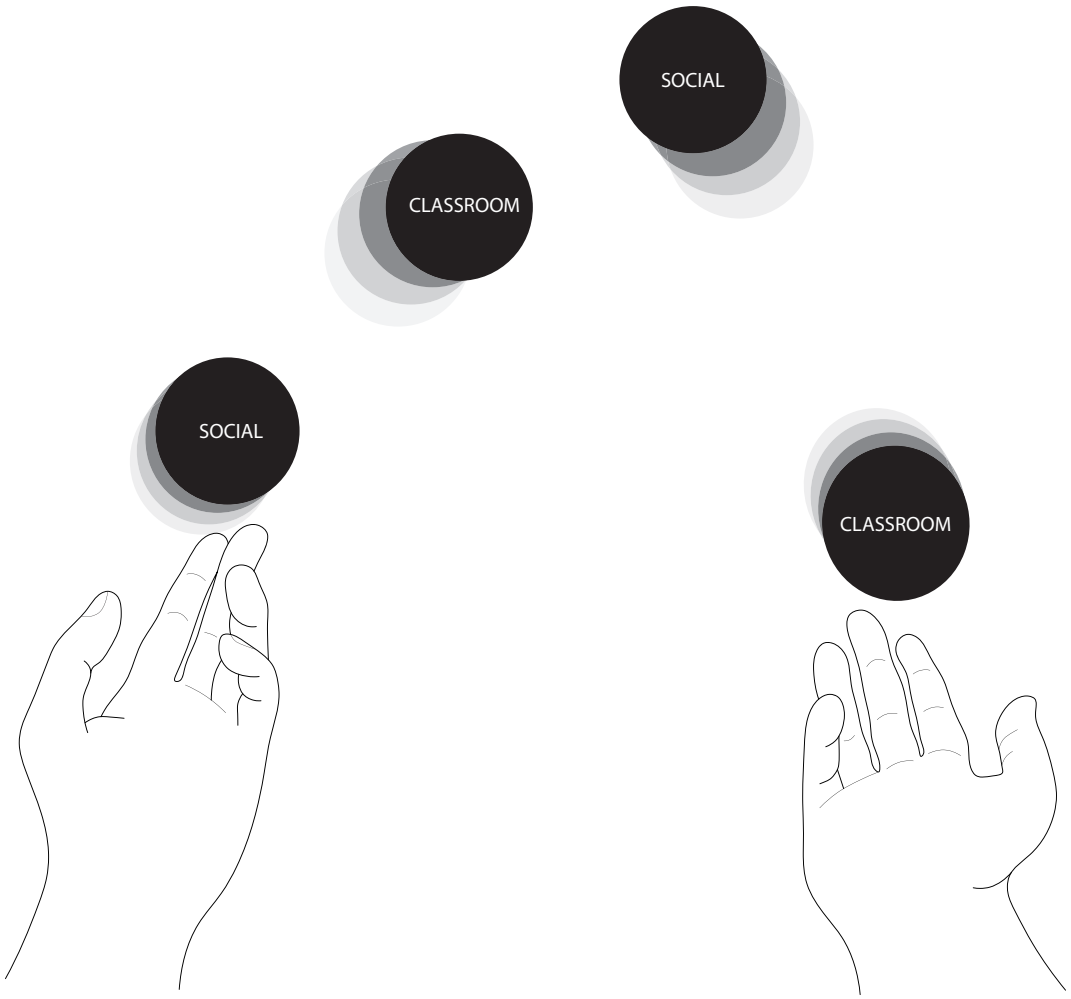
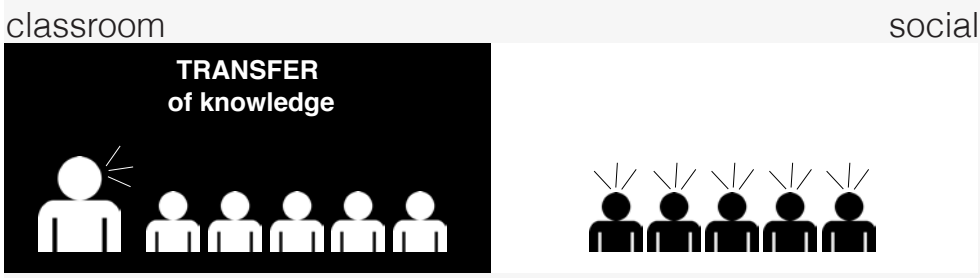
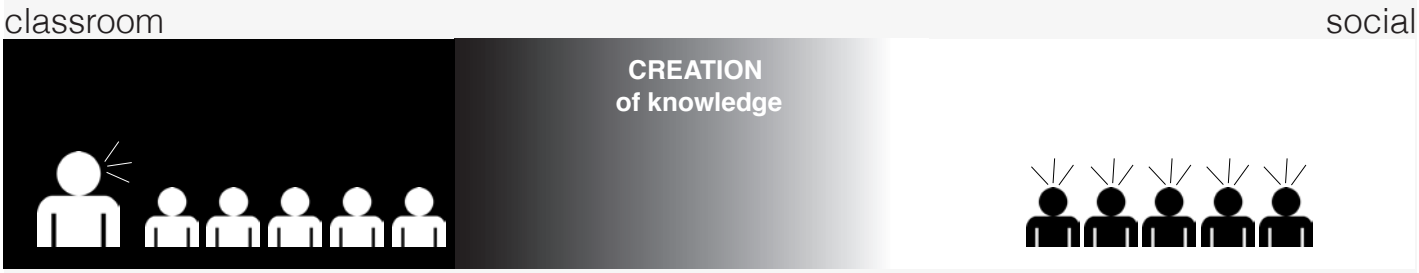


FIGURE 1.36
Juggling the relationship between classroom and social spaces





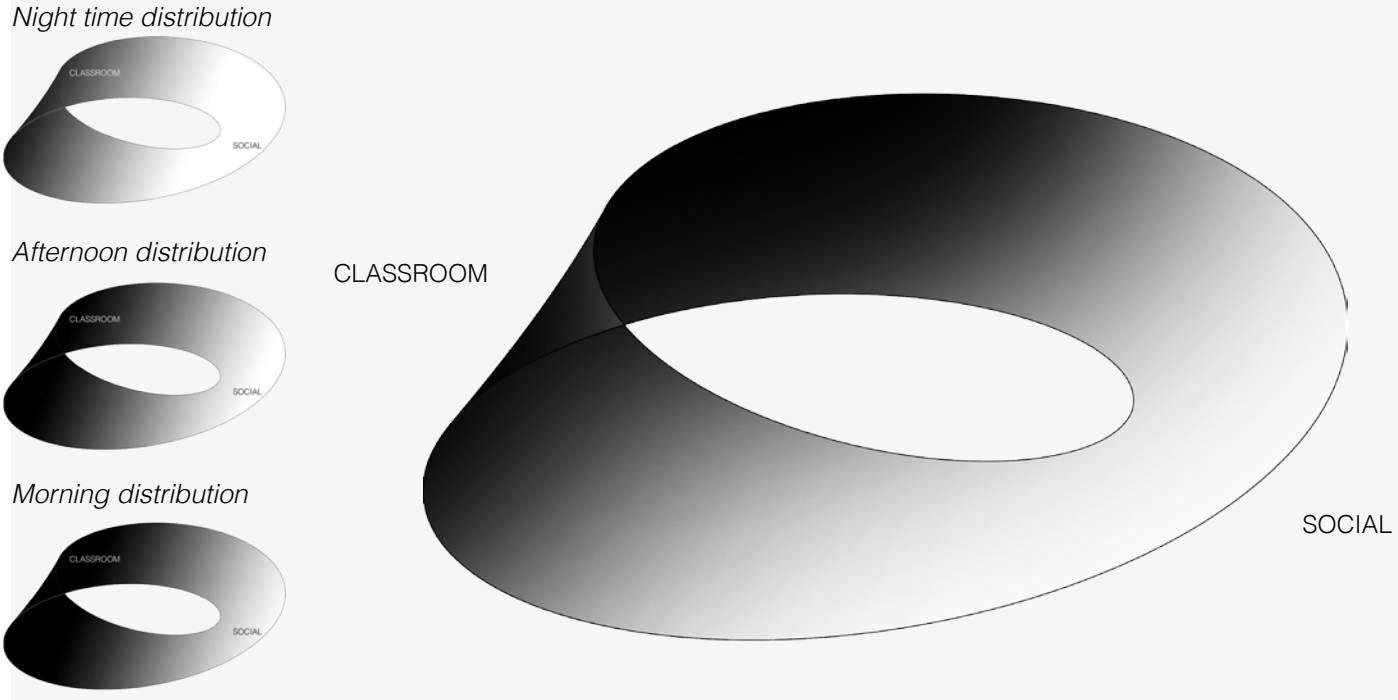


FIGURE 1.37
The variability in the system responds to program needs throughout the course of a day.

TYPOLOGY

Trending Places

An aspect of social networking that establishes popularity among a topic at a specific time is referred to as trending. This can be applied to a building program when certain areas or programs are utilized in higher numbers, it is considered a trending space. This information is then available to users in the building to either increase trending spaces, or improve ones that are not.

Updating Spaces

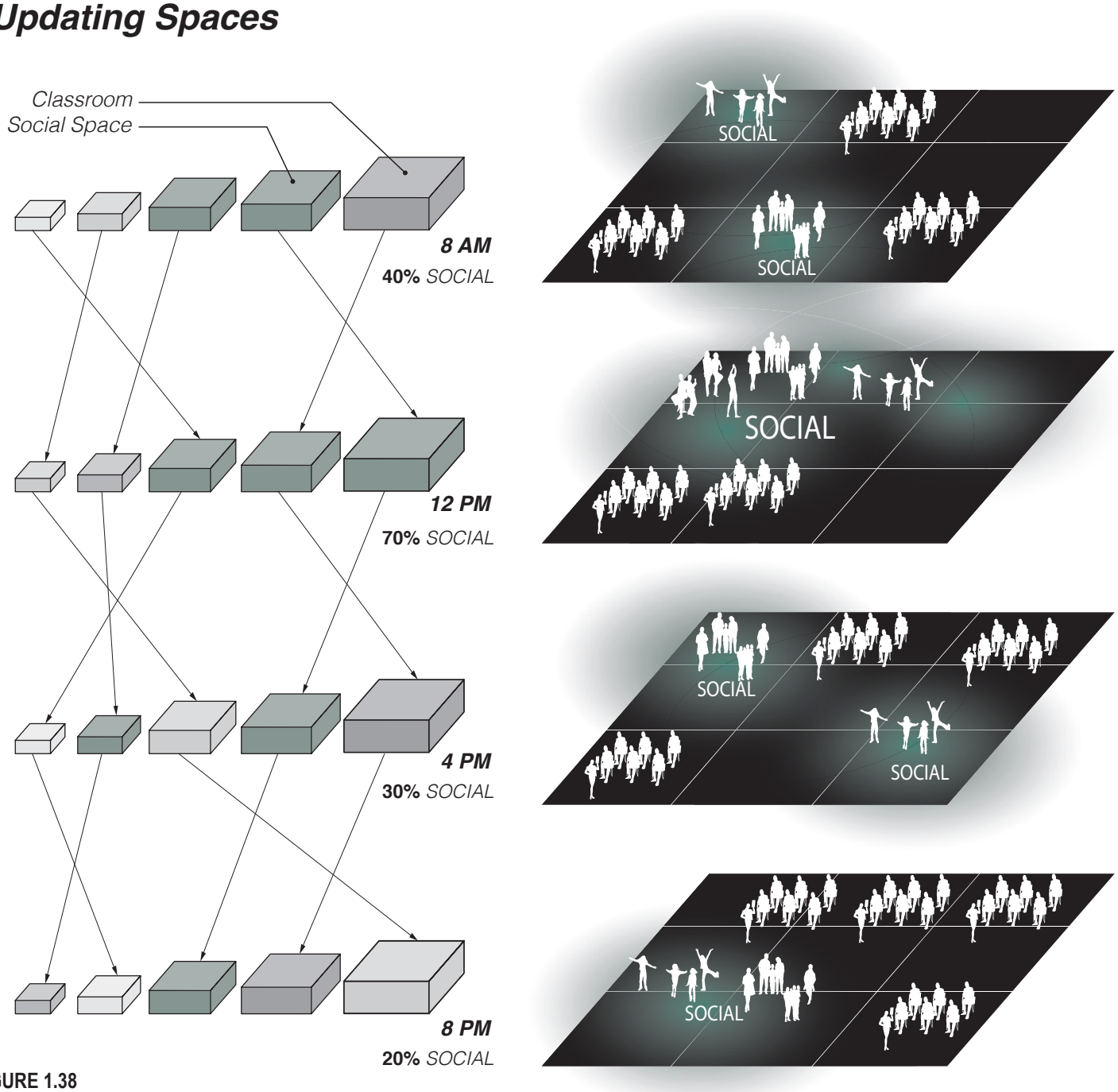
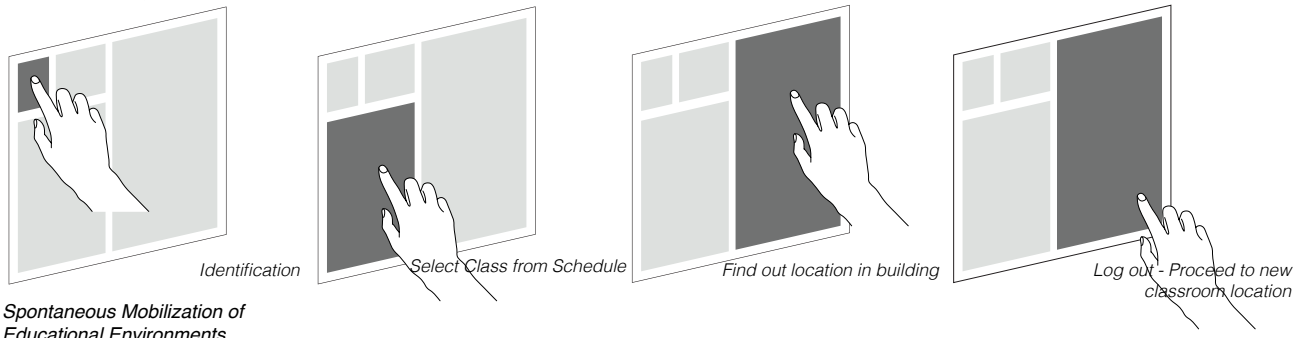


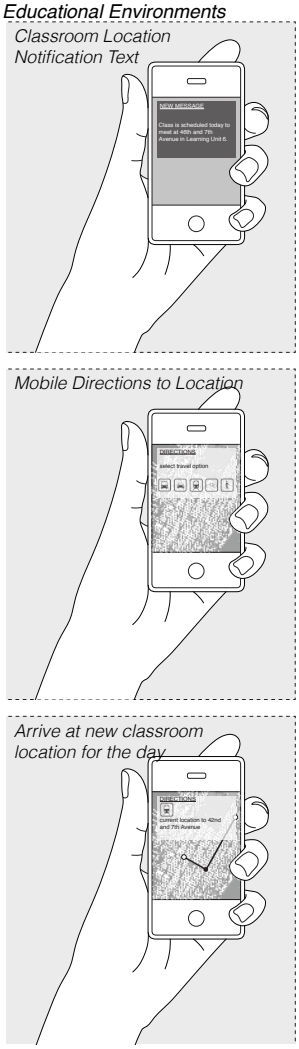
FIGURE 1.38
Classroom is no longer place specific but its location changes based on the number of students that day.

Social Networking Building Interface

ARRIVAL SEQUENCE



Spontaneous Mobilization of Educational Environments



ENTRY SEQUENCE INTERFACE

Interface shows connections to existing friends within a building and locates potential new ones

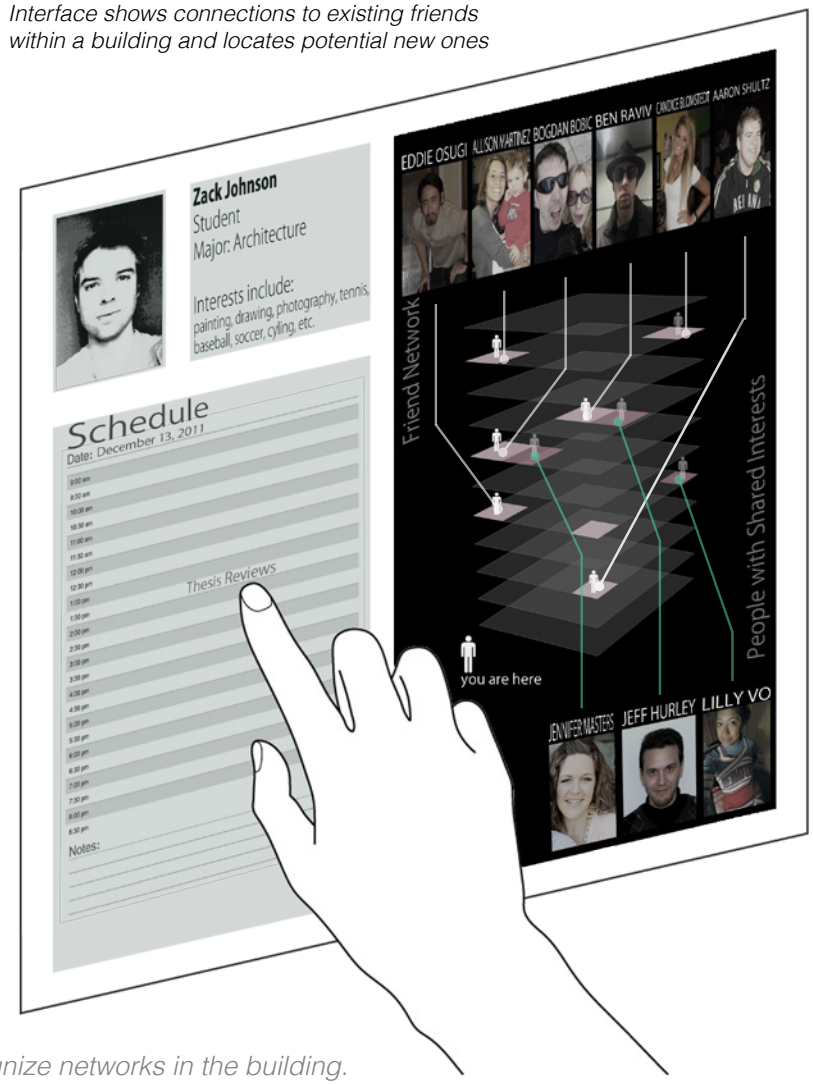
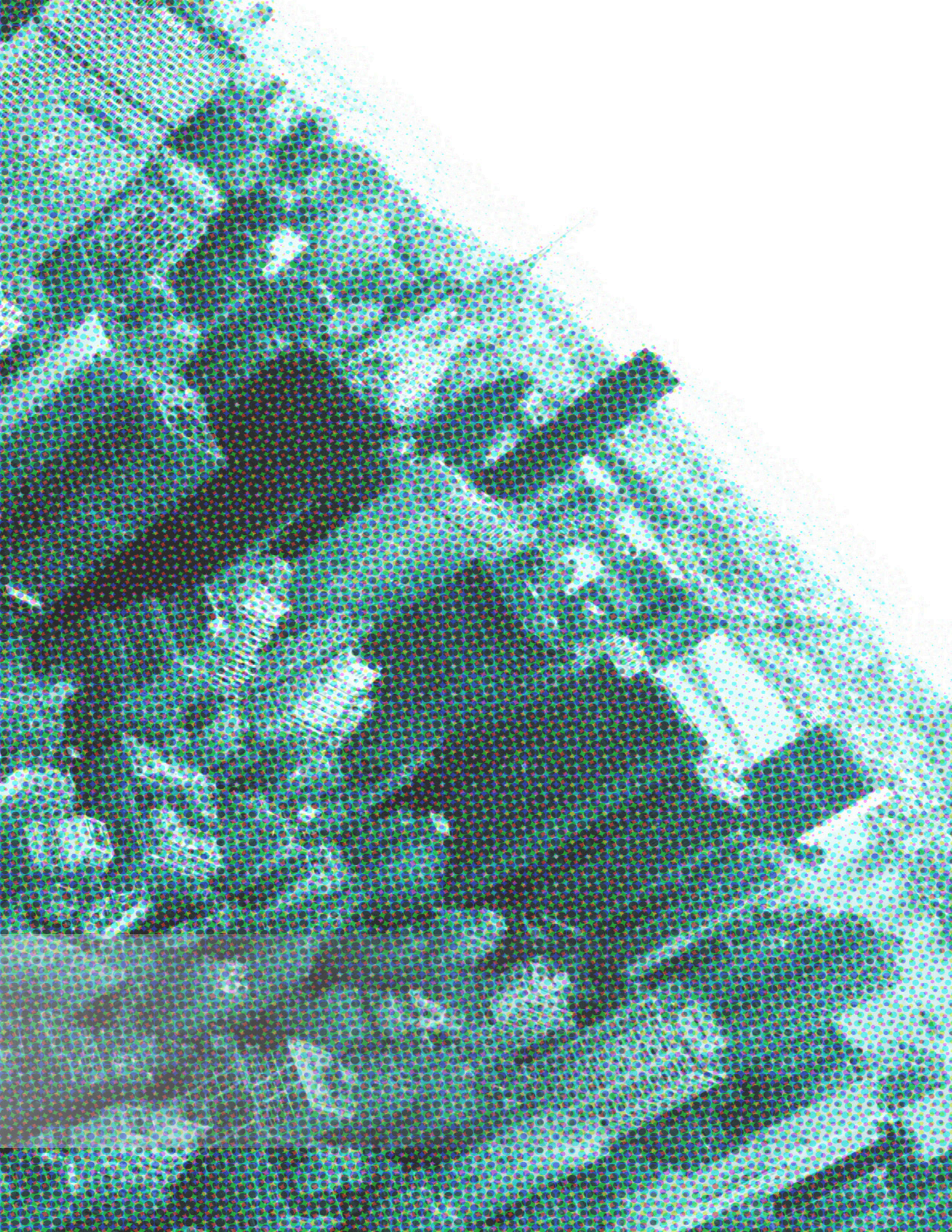


FIGURE 1.39

Interface system that acts to recognize networks in the building.



SCENARIOS

Mobilizing Education

Three scenarios were devised in the borough of Manhattan in New York City to pursue the mobilization of a typology that rethinks the static learning model that exists in the university today. They range from a mobile classroom typology that engages the existing infrastructure and transitions from location to location when needed. The second includes the opportunity to extend the classroom to public open spaces and the third model aims to mobilize program within a static building type.

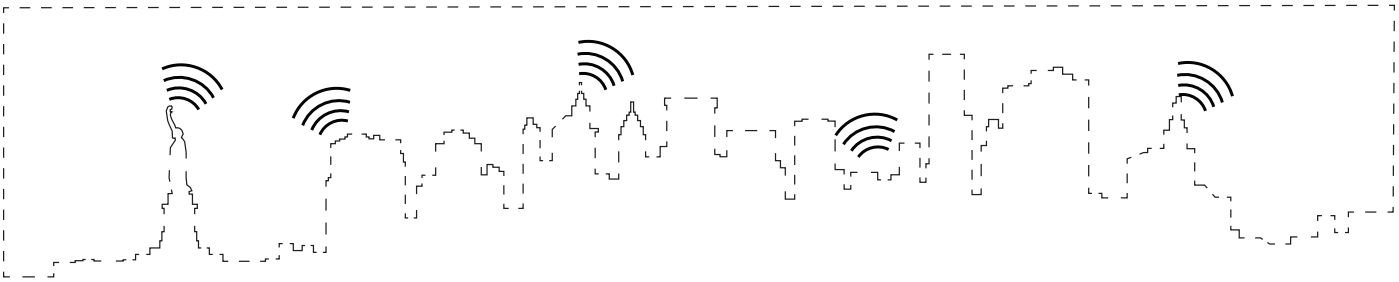


FIGURE 2.1
The city is now alive and talking to each other.

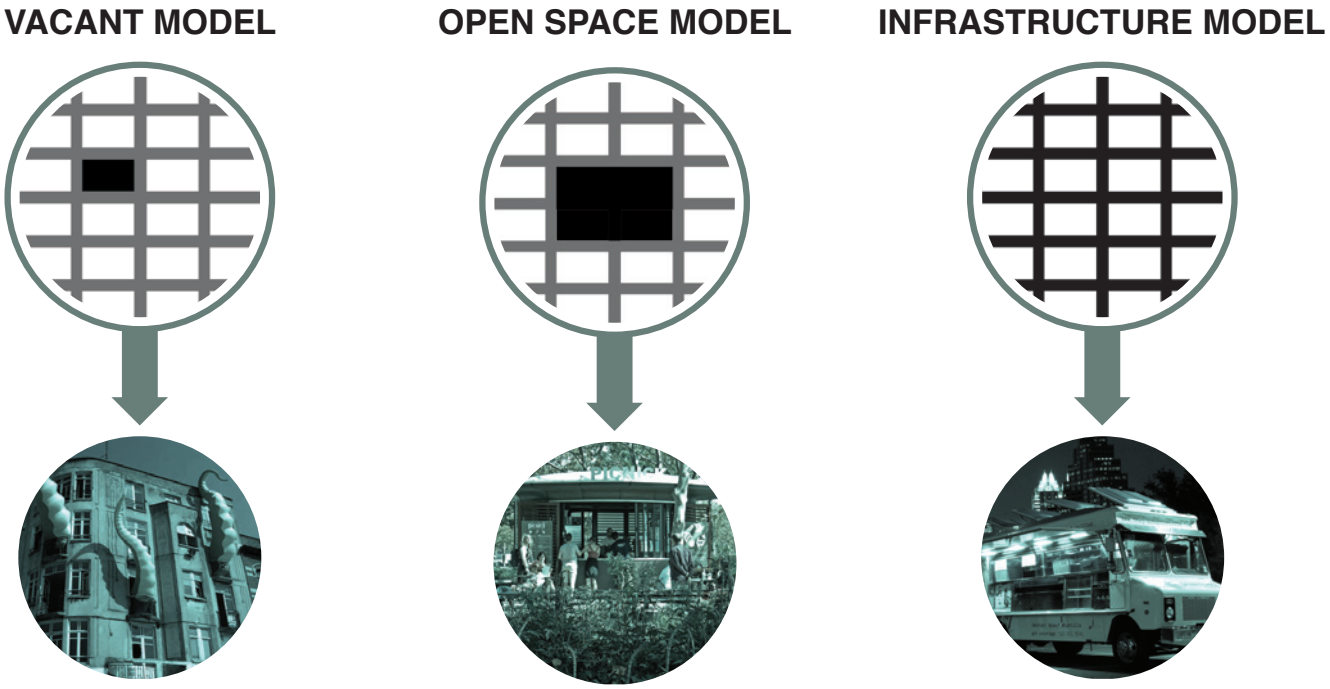


FIGURE 2.2
Mobile learning strategies.

MANHATTAN, NY

FIGURE 2.3
Public education institutions in Manhattan.

SCENARIO 01 *vacant model*

West Chelsea

West Chelsea has become an emerging fashionable neighborhood and a new center for art galleries, boutiques, clubs and residential development. West Chelsea was a neglected New York City neighborhood until galleries forced out of SoHo due to high rents began moving into West Chelsea between 10th and 11th Avenue. This area has become the epicenter of New York City art and is now known as the "Gallery District." Over 250 art galleries have moved to West Chelsea in the last 10 years.

Property Description

Block: 697
Lot: 60
Lot Size: 100' X 98.5'
Zoning: M1-5/WCH Current FAR: 5 to 6.5 with Community Facility Bonus

Stacking Plan Estimate (Assumes 5 FAR with no community facility)

Lower Level:	10,000
Ground:	10,000
Second Floor:	5,925
Third Floor:	5,925
Fourth Floor:	5,925
Fifth Floor:	5,925
Sixth Floor:	5,925
Seventh Floor:	5,925
Eighth Floor:	3,950

Total SF: **59,500**
*Assumes no mechanical deductions.

Building Description

Stories: 0
Size: Approximately 9,900
Real Estate Taxes: $33,143

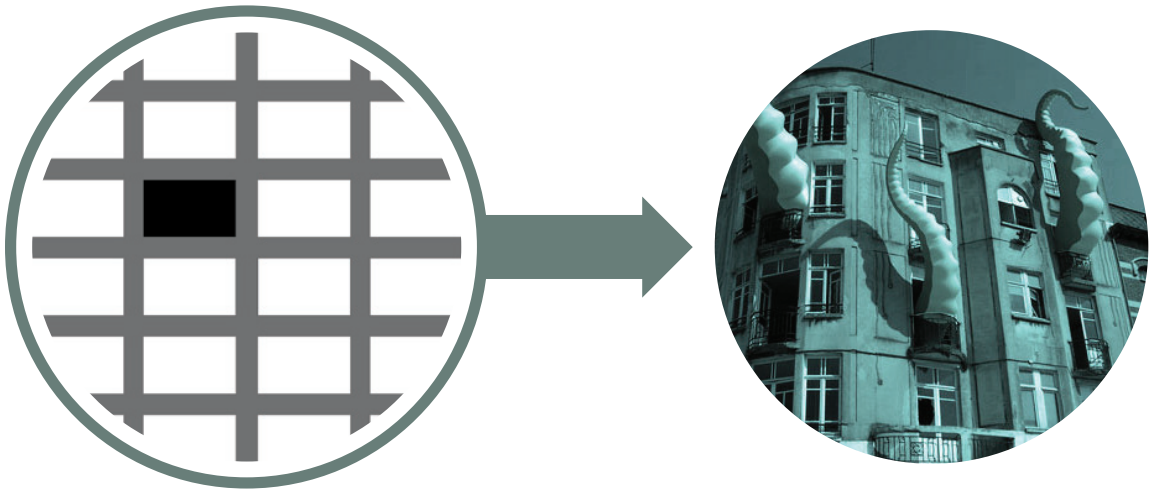


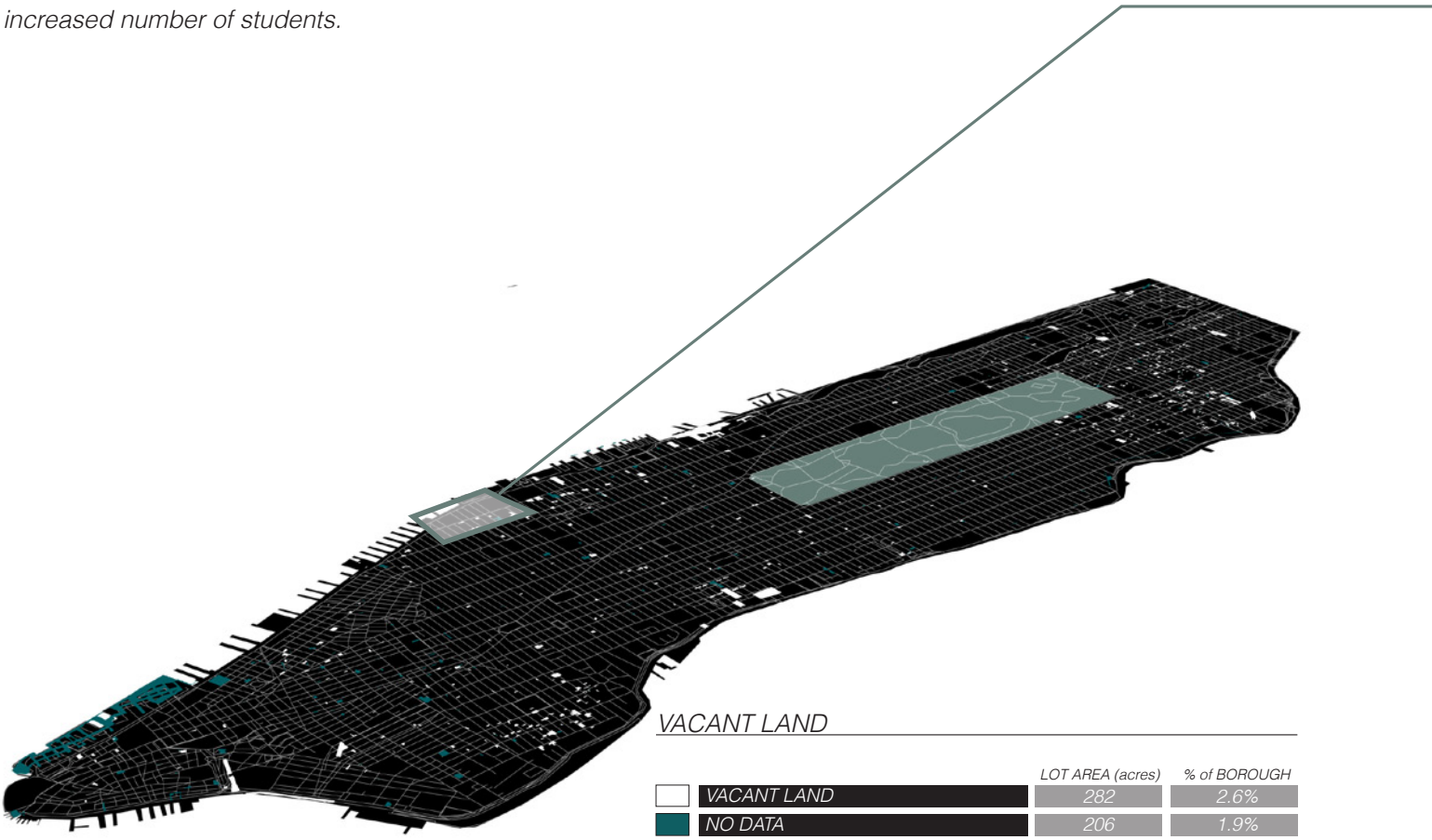
FIGURE 2.2
Vacant site approach.

FIGURE 2.3
Manhattan networks analysis.

SCENARIO 01

Vacant Model

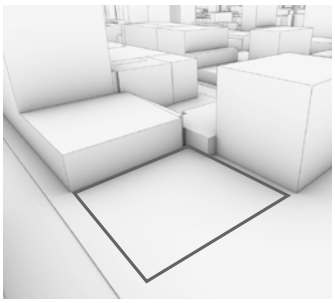
As one of the densest areas of New York City, Manhattan is considerably built up, and because land value is high, justifying building a new education facility is a difficult task. However, by initially aiming to improve the efficiency of a university building, this model will allow for an increased number of students.



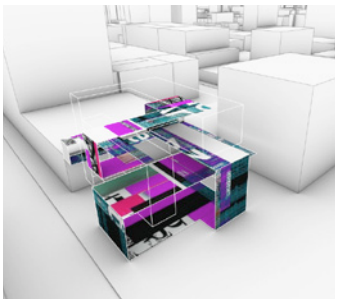
VACANT LAND

	LOT AREA (acres)	% of BOROUGH
VACANT LAND	282	2.6%
NO DATA	206	1.9%

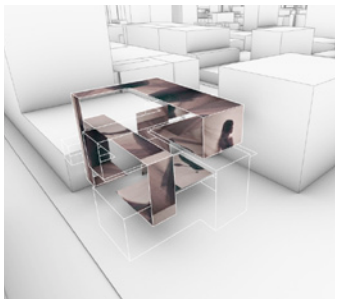
ACTIVATING STUDENT INTERACTION ACROSS DISCIPLINES



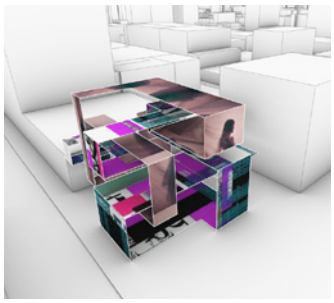
SITE AND CONTEXT



HUMANITIES STUDENT CIRCULATION

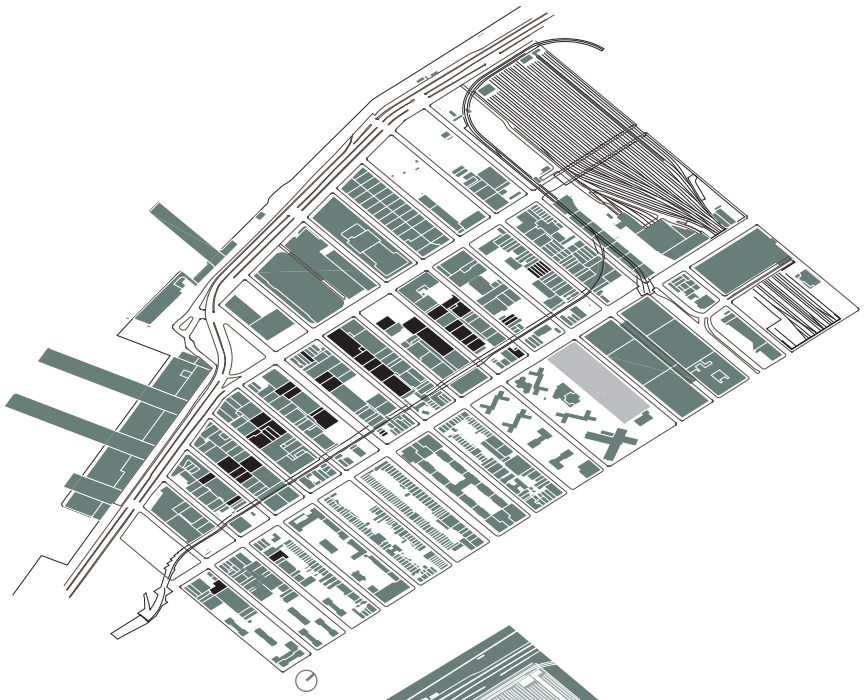


SCIENCES STUDENT CIRCULATION

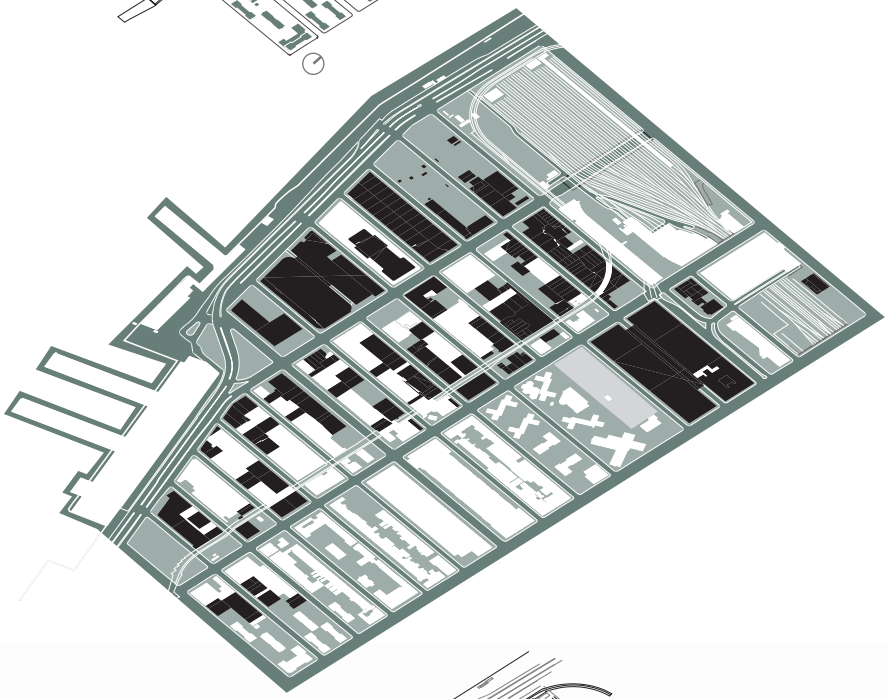


INTEGRATED SOCIAL CIRCULATION

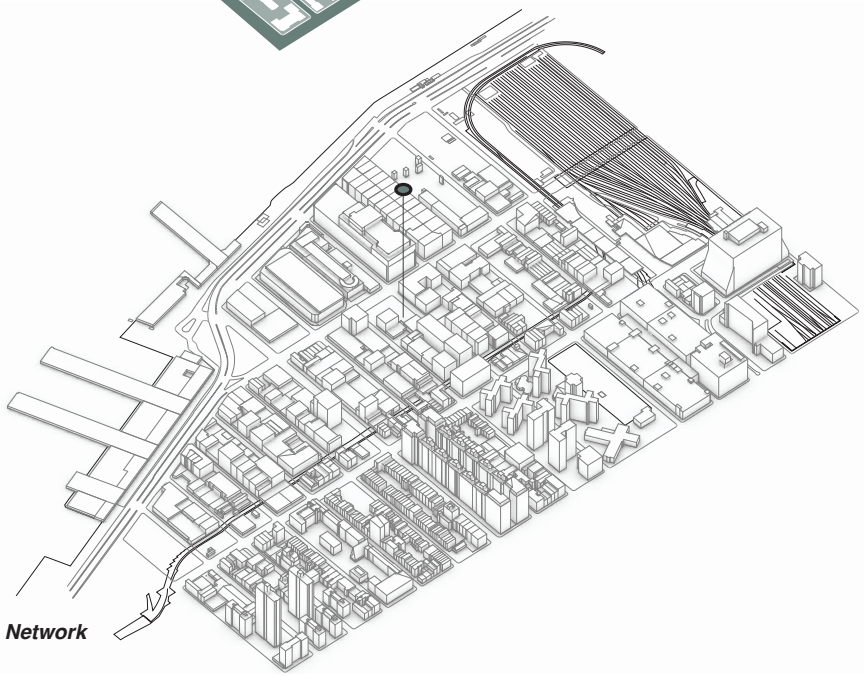
FIGURE 2.4
Student circulation pattern.



Galleries



Manufacturing



Singular Building Network

FIGURE 2.5
Single node network pattern.

SCENARIO 01 NEW MEDIA ARTS

Vacant Model

Programmatically, the vacant model can be used to explore new and emerging disciplines. As an example, the design of a new media arts school was chosen to explore the vacant model and the creation of a new networking typology that aims to connect and improve communcation in the field of new media arts.

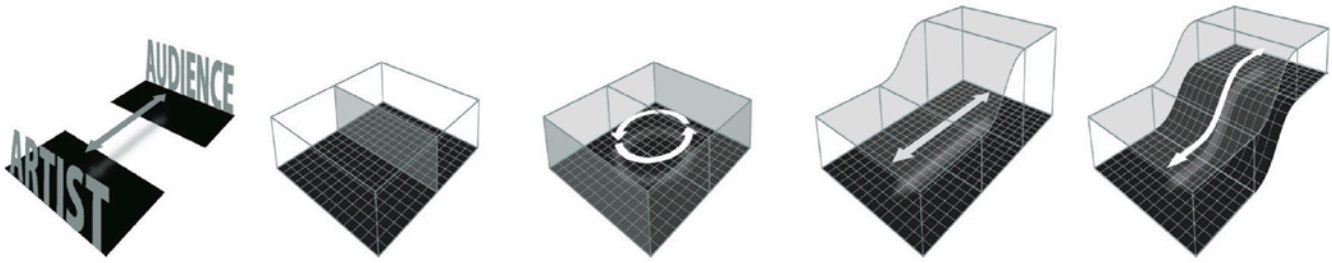


FIGURE 2.6
Social proximity diagrams.

NEW MEDIA ARTS PROGRAM	amount	width (ft.)	length (ft.)	height (ft.)	area (sq ft.)	total area (sq ft.)
Recording Studio	24	06	01	0	2400	4800
Lobby	1	40	70	10	2800	2800
Sound Performance Lab	1	30	40	101	200	1200
Moving Image Lab	1	30	40	101	200	1200
Film Studio Set	24	06	01	0	2400	4800
Post Production Space	23	04	01	0	1200	2400
Data/Mechanical	41	21	51	10	80	720
Offices	51	01	21	10	20	600
Studios	31	01	21	10	20	360
Exhibition Spaces	53	04	01	01	200	6000
Theatre	1	50	70	20	3500	3500
Restrooms	61	52	5	10	375	2250
Sub Total	31					**30,630**
structural = 2%	0.02					613
circulation = 22%	0.22					6739
mechanical = 3%	0.03					919
Total						**38,900sf**
Total Users				38900/15sf=		2,593

FIGURE 2.7
Program analysis.

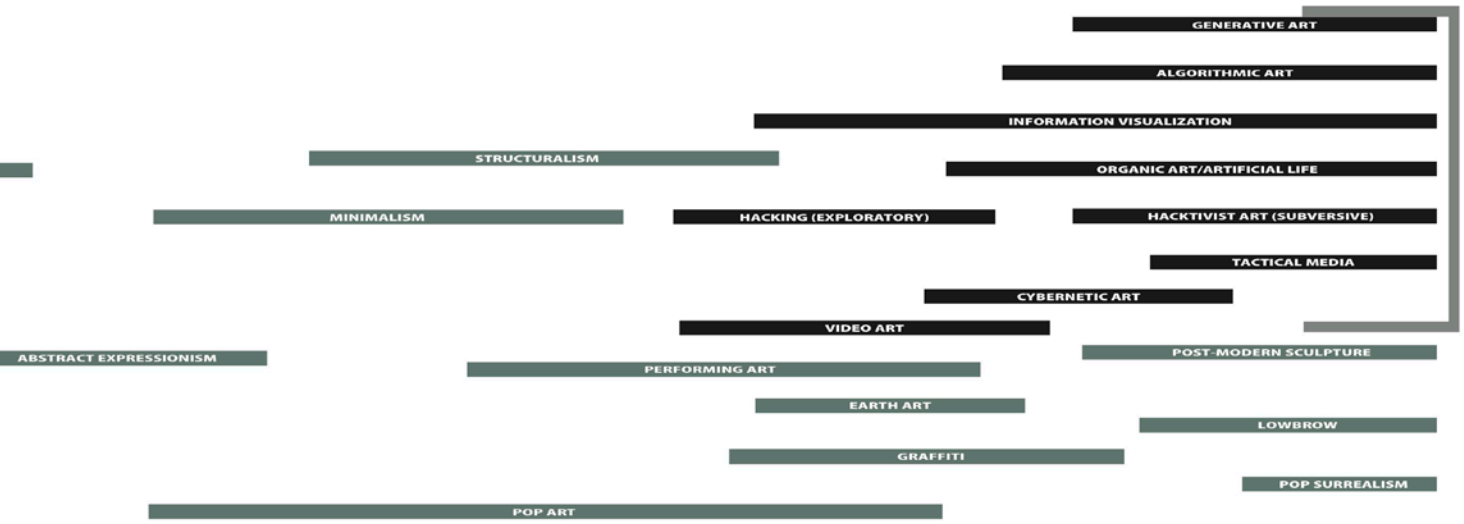


FIGURE 2.8
History of the creative arts.

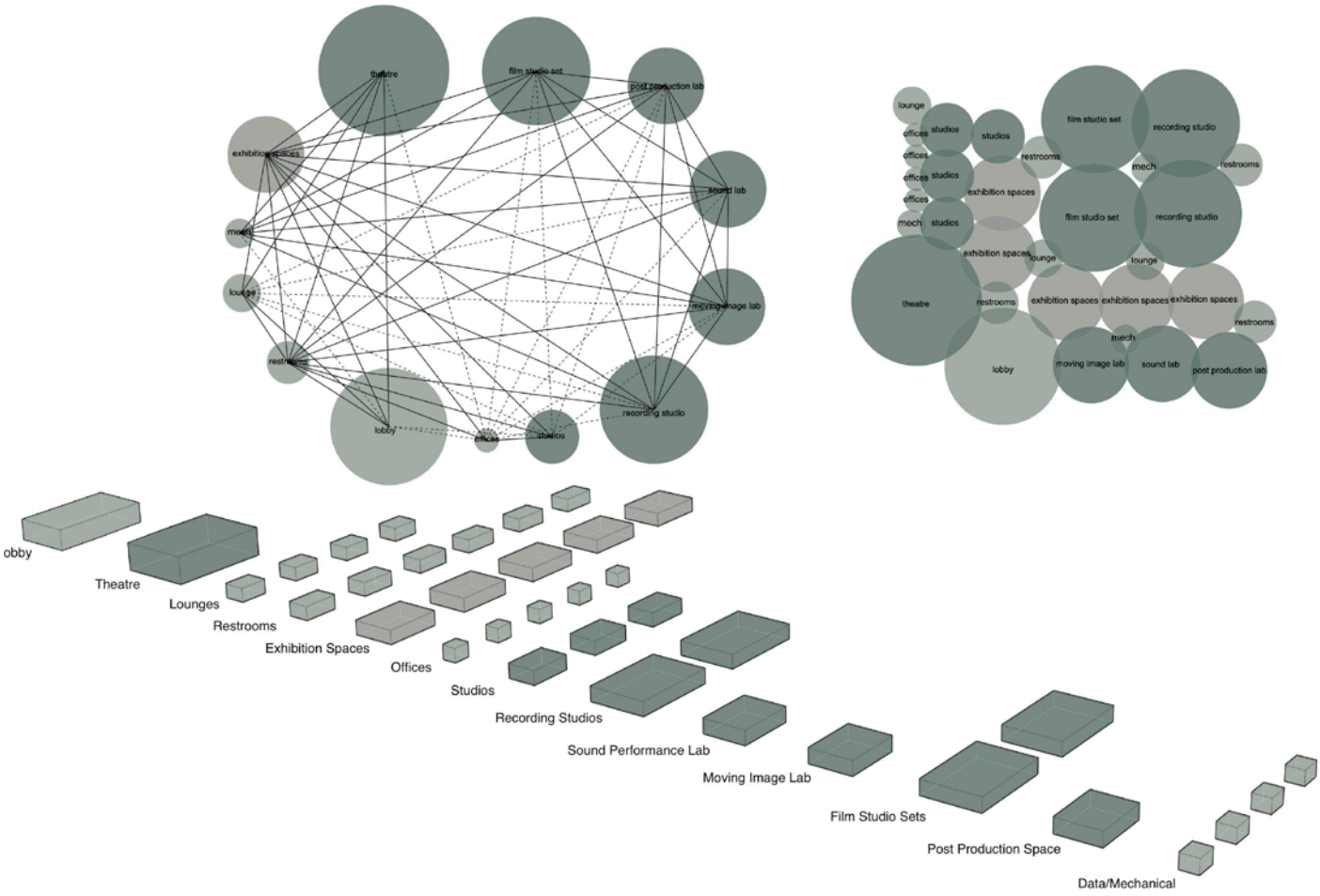


FIGURE 2.9
Program matrix diagrams.

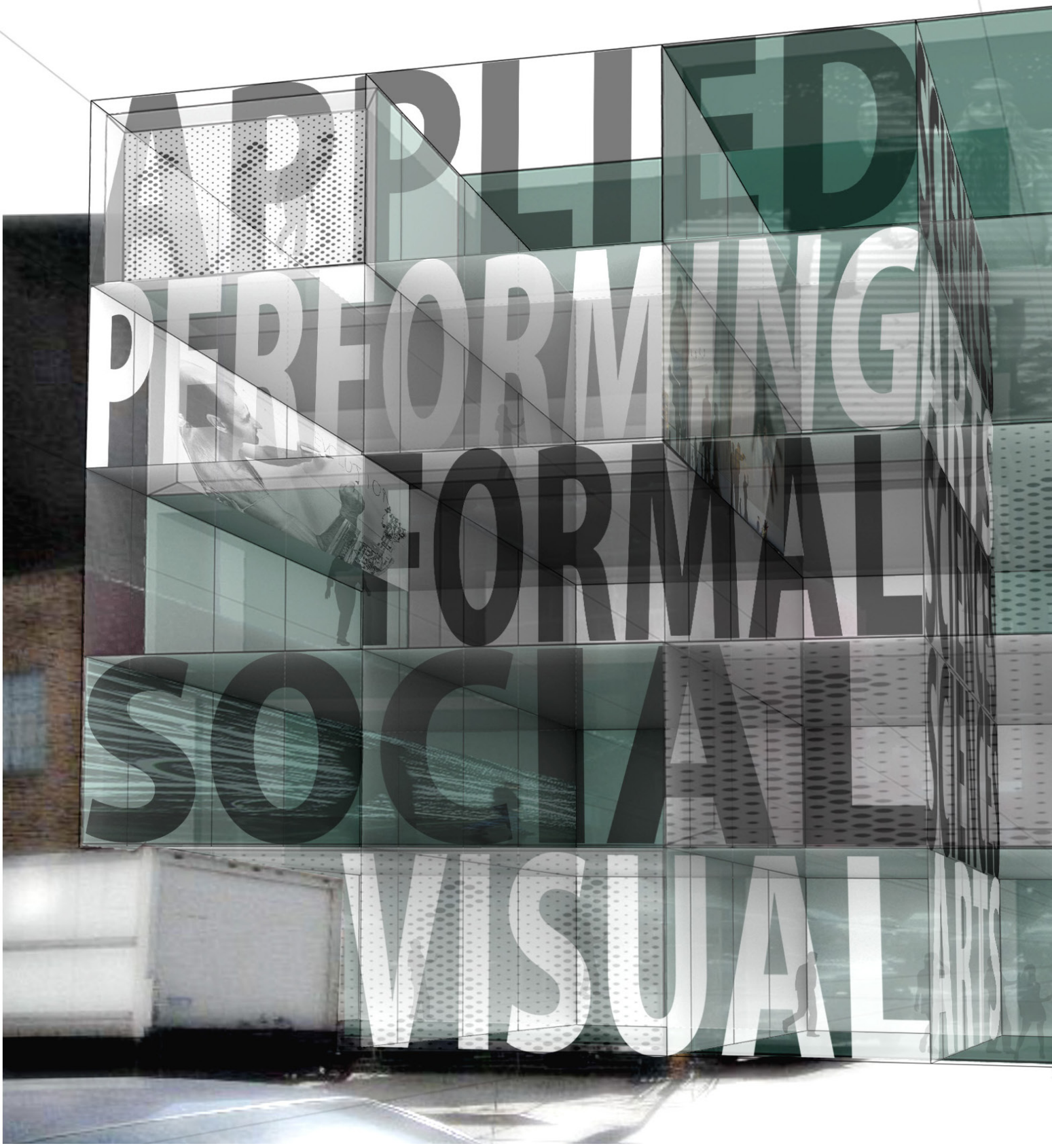
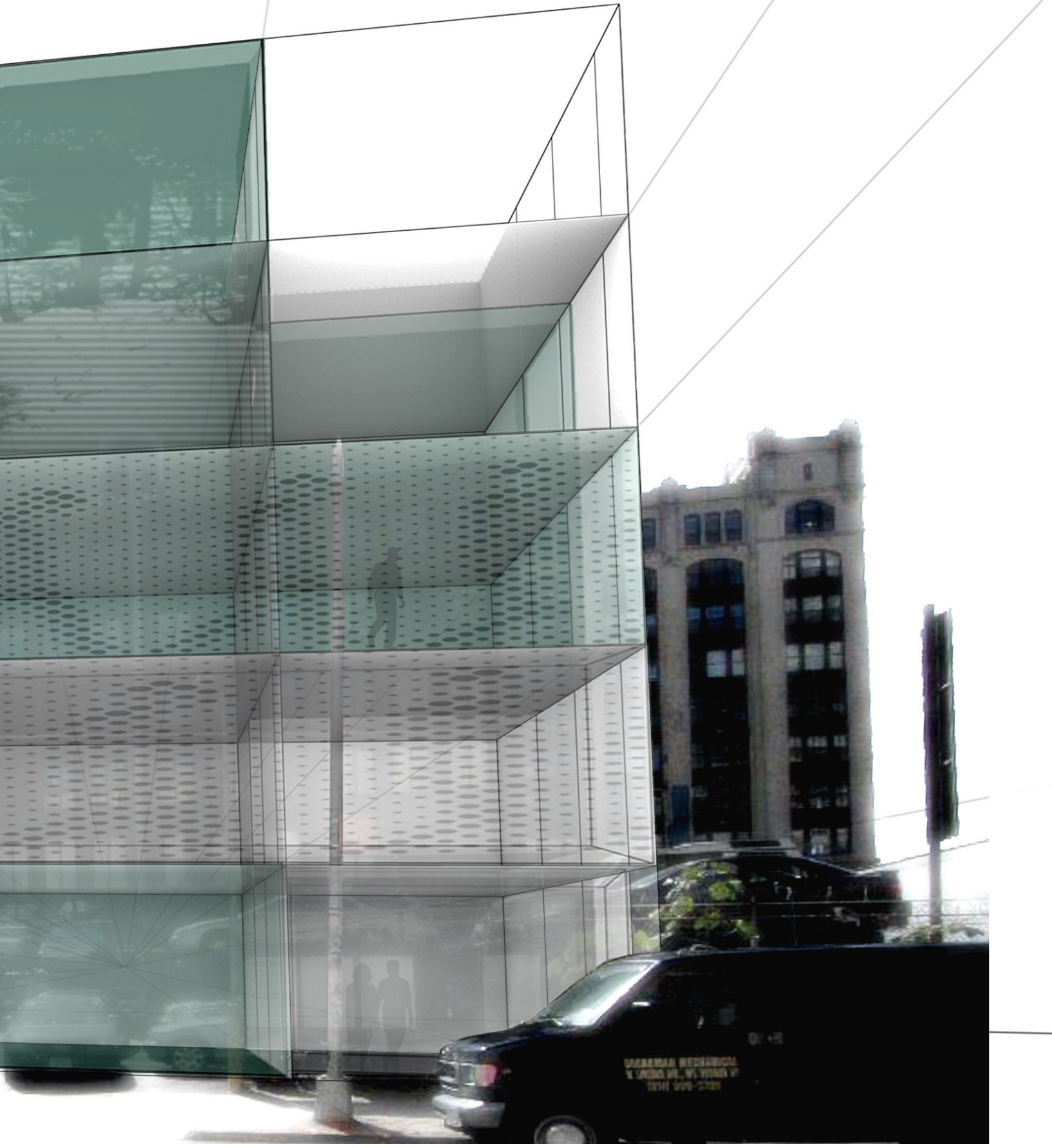


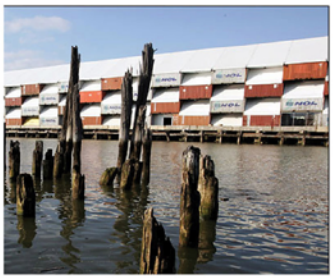
FIGURE 2.10
New Media Arts program distribution.

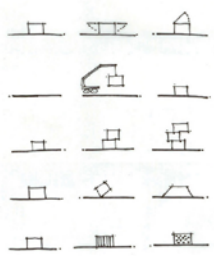


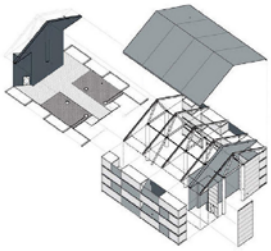
SCENARIO 02 *infrastructure model*

Times Square

Times Square is a hotspot of tourism and entertainment, not your typical place to implement an educational building typology. Upon my visit this summer, I noticed the incredible energy in Times Square that persisted throughout the entire day. Although the area is heavily built up, I decided to implement an infrastructural education model that utilizes small transportable modules to exhibit student work, essentially becoming another entertainment mechanism for the public.







Mobile Exhibition Case Study

Nomadic Museum - Shigeru Ban

The Nomadic Museum is a case where the artist wanted to exhibit his work outside of the traditional gallery environment. Thus the idea was to design a transportable gallery that could be mobilized throughout the city. I decided to implement a similar strategy to exhibit student work throughout New York City.

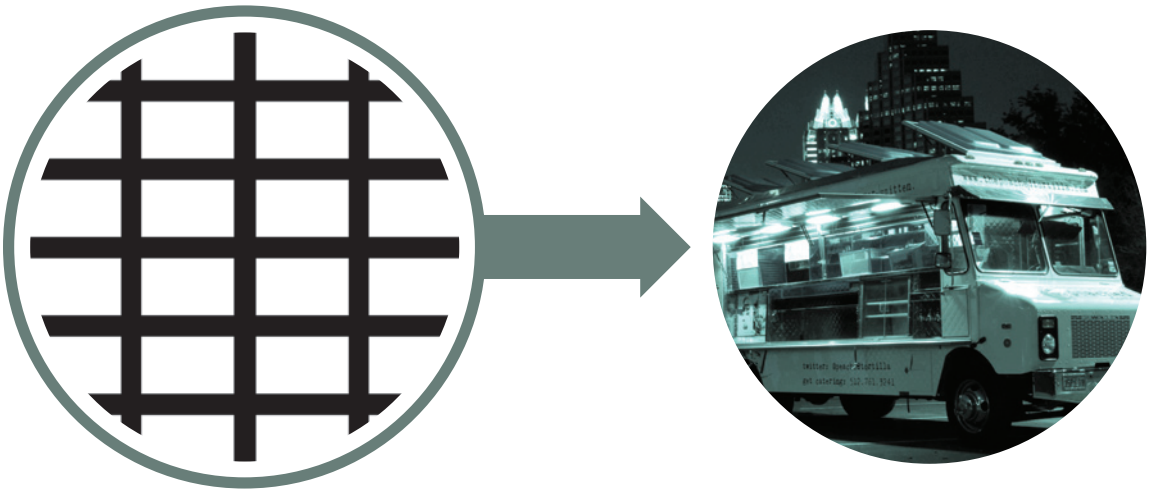


FIGURE 2.11
Mobile "food truck" model.

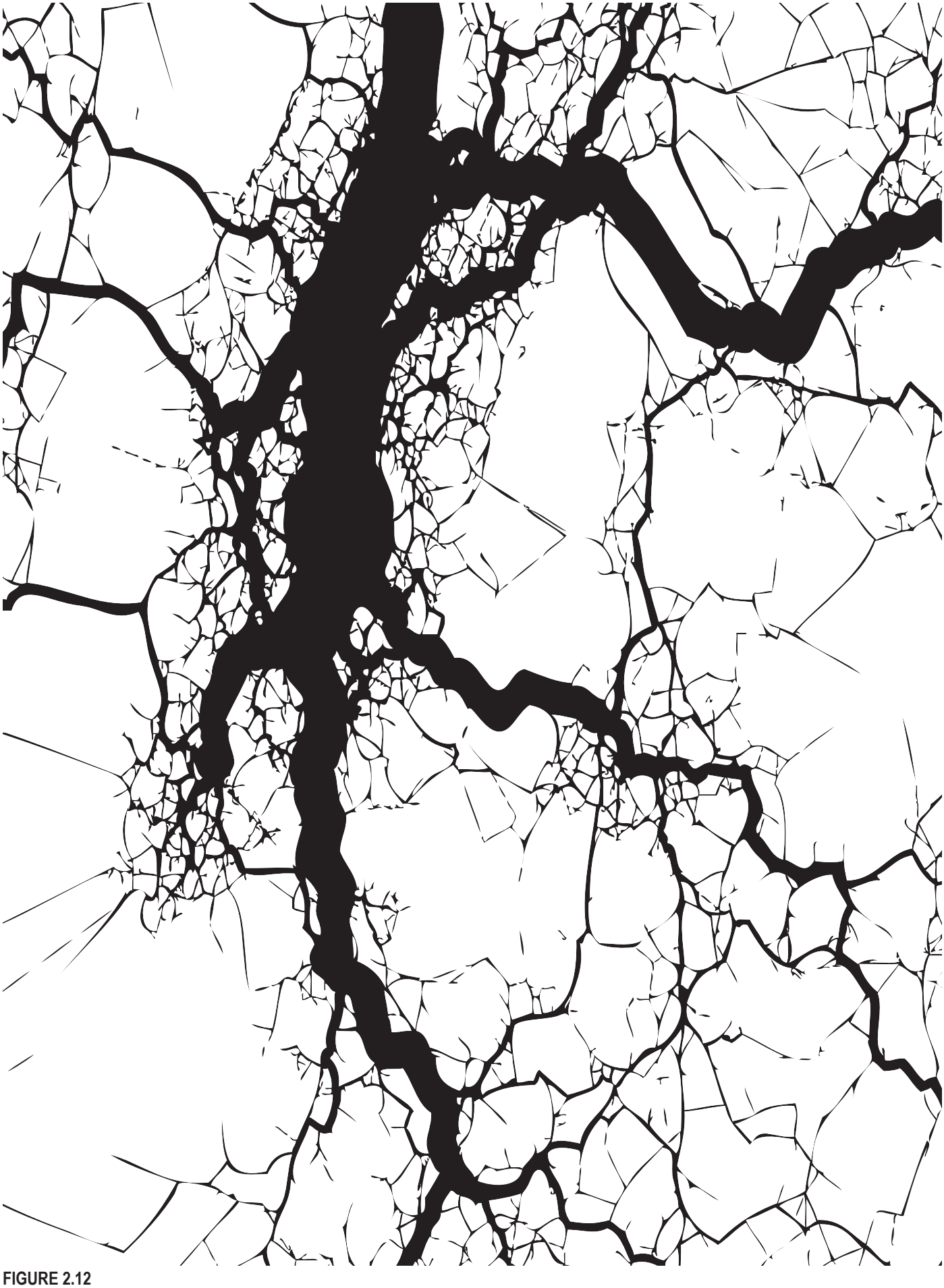
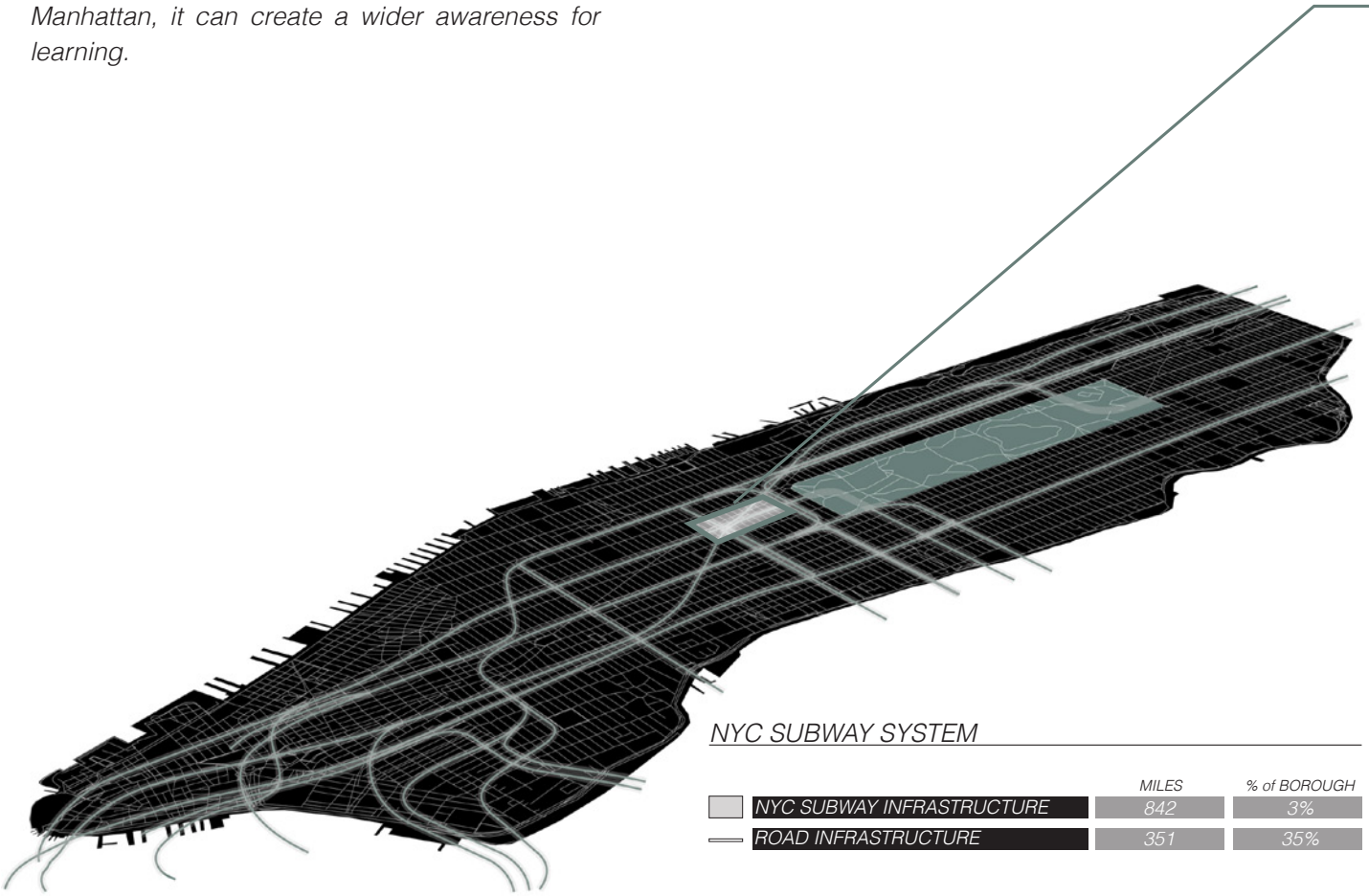


FIGURE 2.12
Twitter user location in NYC.

SCENARIO 02

Trending Places

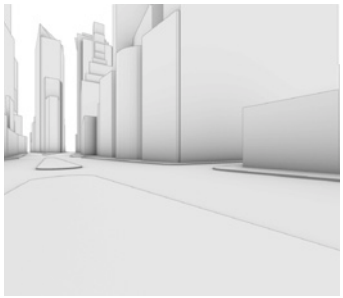
Scenario 2 is an investigation into the way we can create connection on the existing infrastructure of Manhattan. The automobile has isolated the individual and creates minimal connections across a community. By distributing mobile classrooms throughout the streets of Manhattan, it can create a wider awareness for learning.



NYC SUBWAY SYSTEM

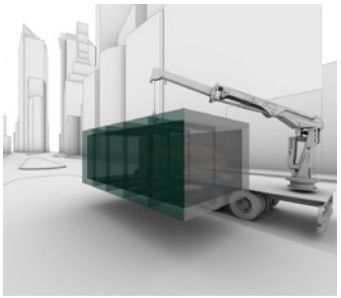
	MILES	% of BOROUGH
NYC SUBWAY INFRASTRUCTURE	842	3%
ROAD INFRASTRUCTURE	351	35%

DEPLOYING STUDENT EXHIBITION MODULES

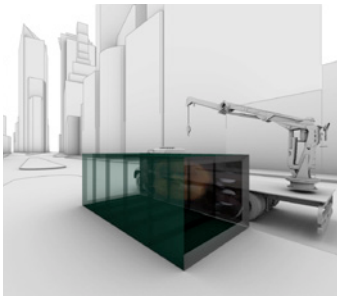


TIMES SQUARE FACING SOUTH

EXHIBITION ARRIVAL

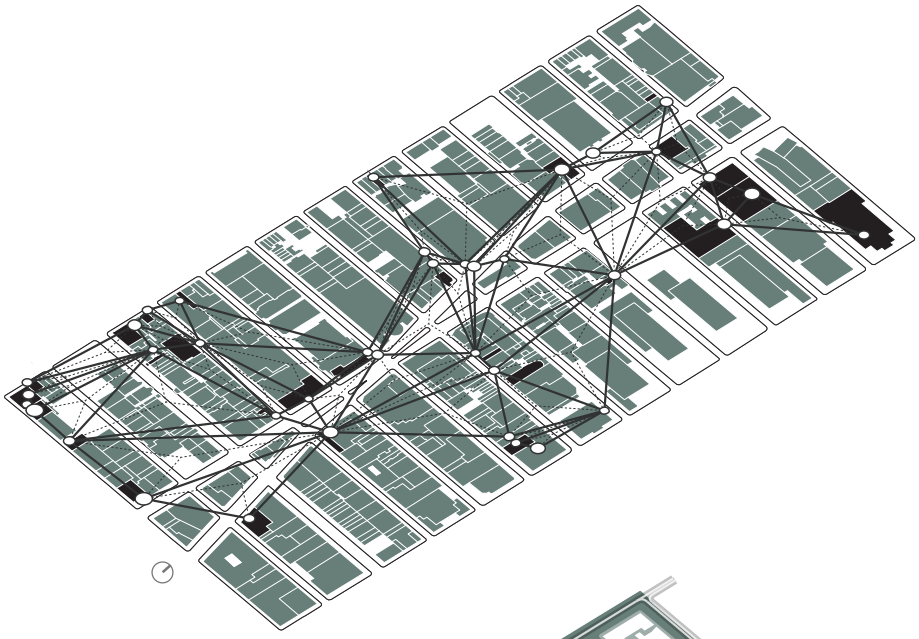


EXHIBITION DEPLOYMENT

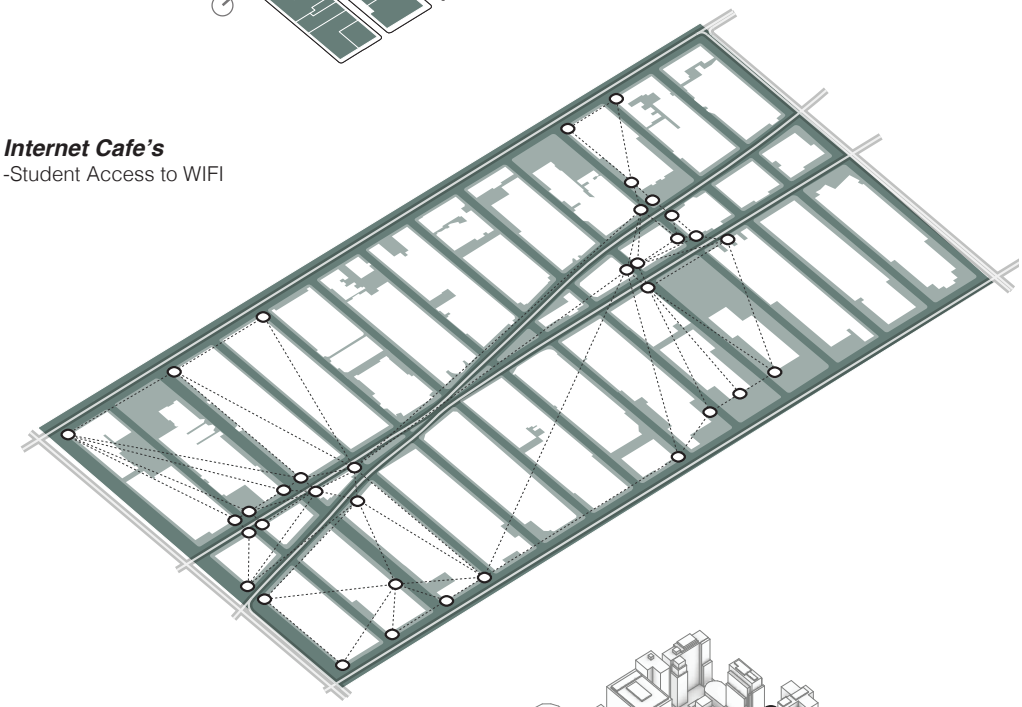


EXHIBITION READY

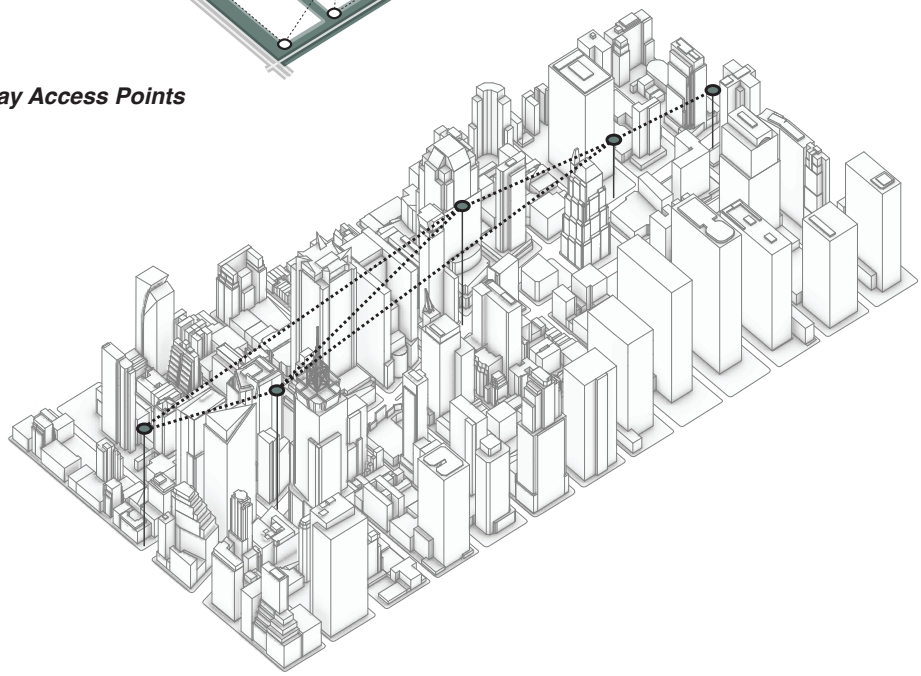
FIGURE 2.13
Rapid deployment system.



Internet Cafe's
-Student Access to WIFI



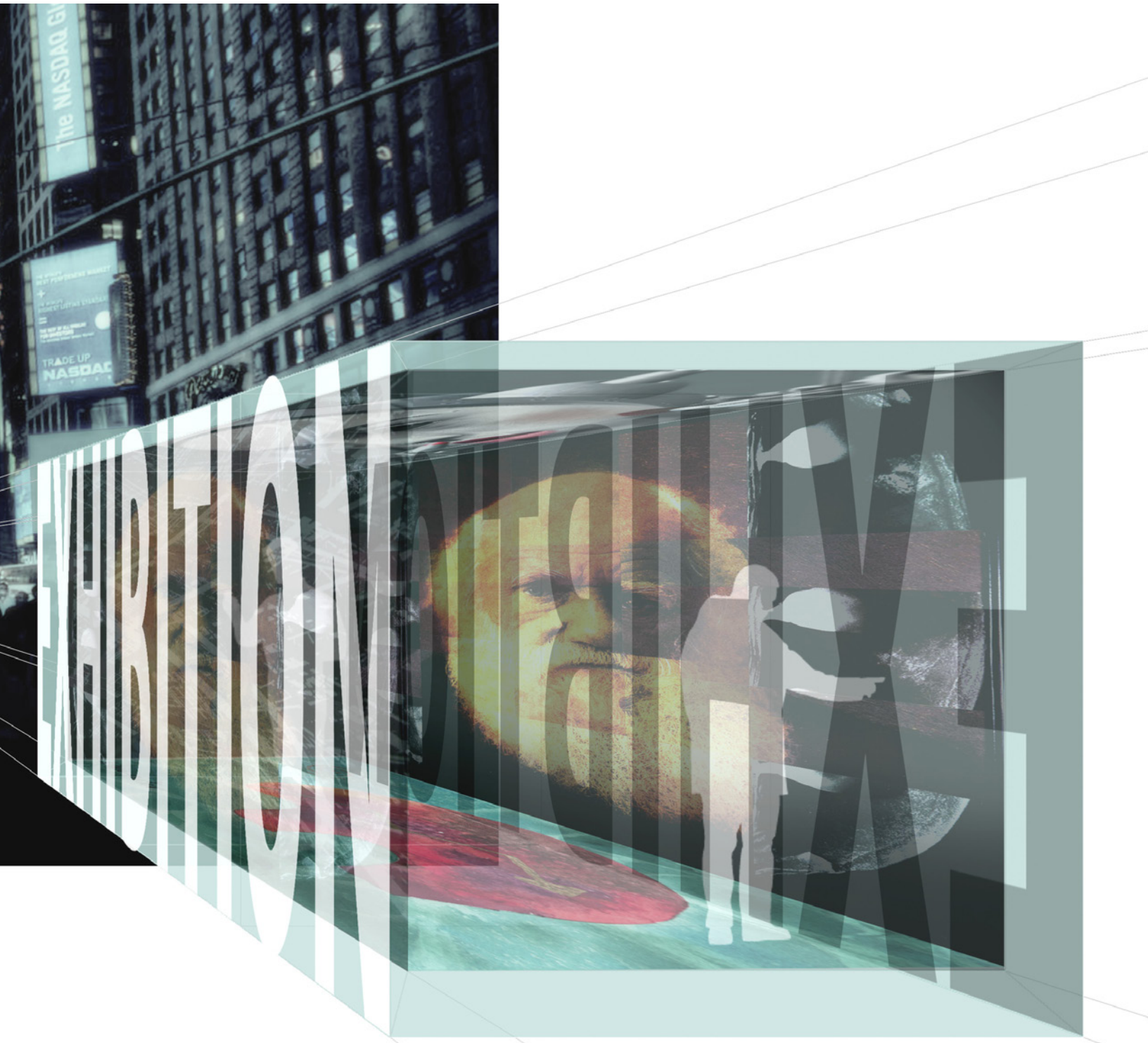
Subway Access Points



Mobile Exhibition Network

FIGURE 2.14
Network distribution along Broadway.

FIGURE 2.15
Deployed classroom in Times Square.


The NASDAQ
TRADE UP
NASDAQ
EXHIBITION

SCENARIO03 *open space model*

Washington Square Park

Upon my visit to Washington Square Park this summer it was easy to see in just a few minutes that the park has nearly all of the key attributes of a great public space. People are engaged in a wide range of activities and uses. There exists a high level of diversity of ages and genders and also there seemed to be equal amount of people in groups as well as alone. Most of the parts of the park are used (there are few empty or unused areas) and I noticed that people use the park at all different times of day and week. Washington Square Park seemed like a good location to engage students by implementing mobile classrooms throughout the park in order to encourage interaction across student groups.

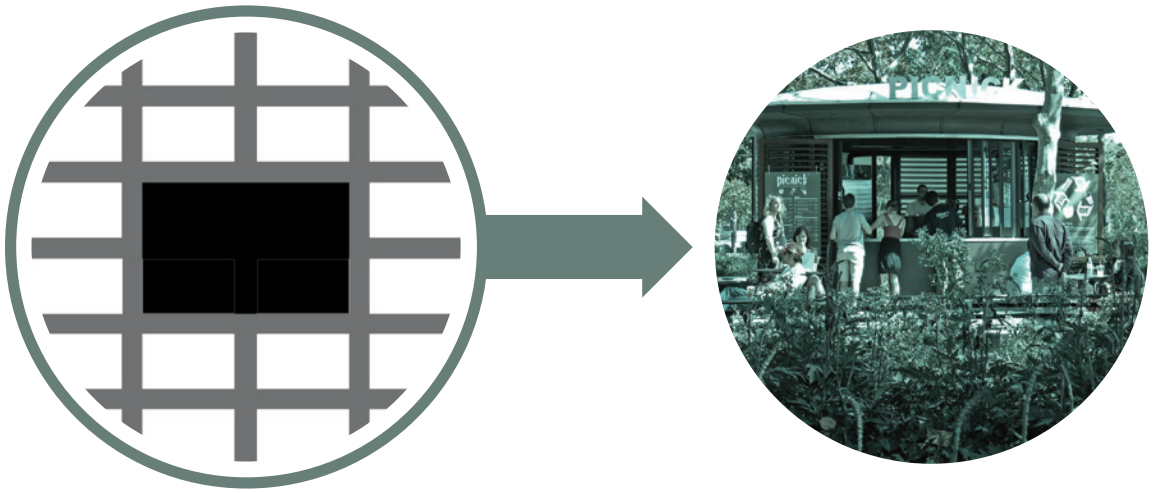


FIGURE 2.16
Pop up pavilion model.

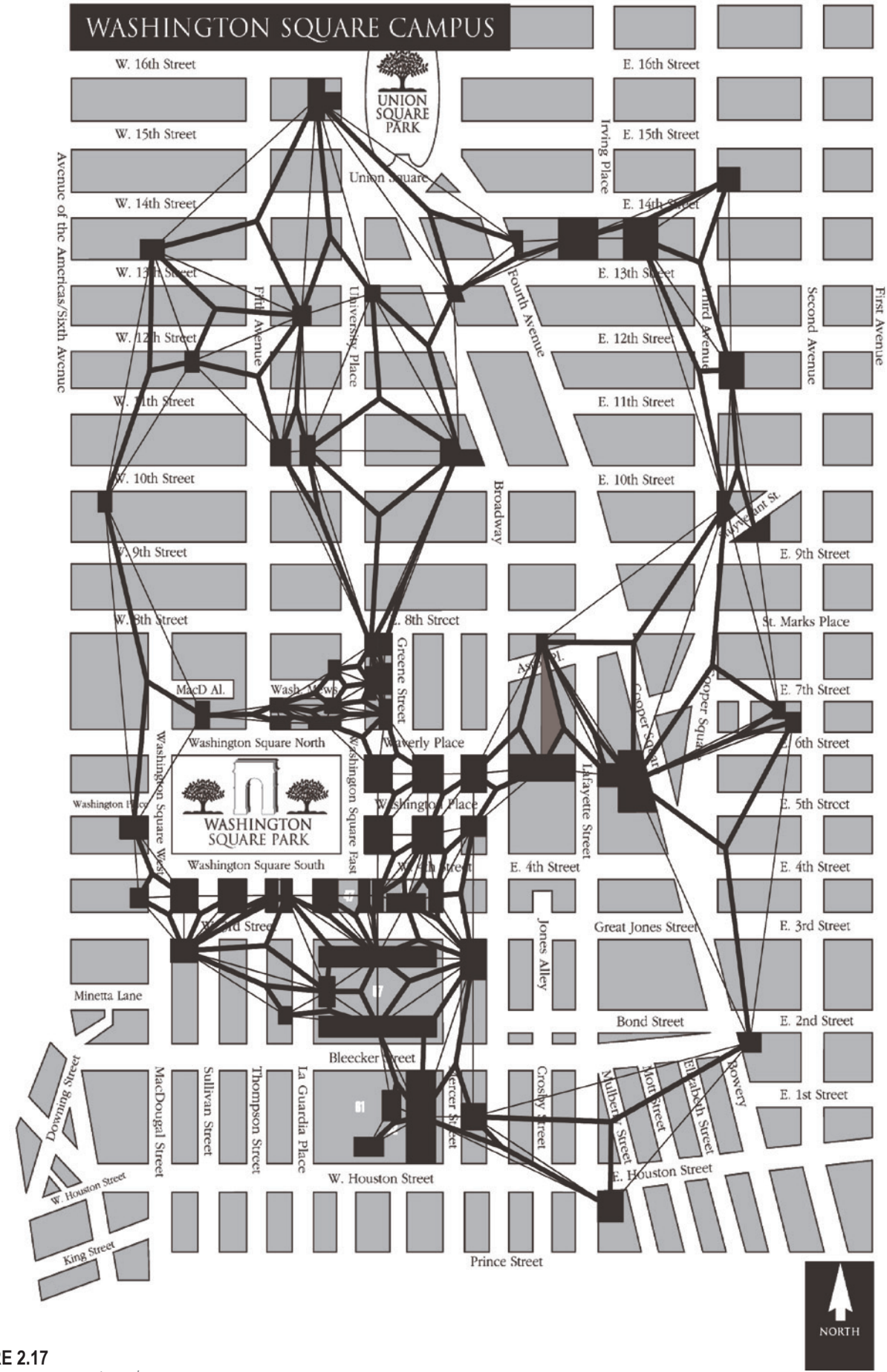
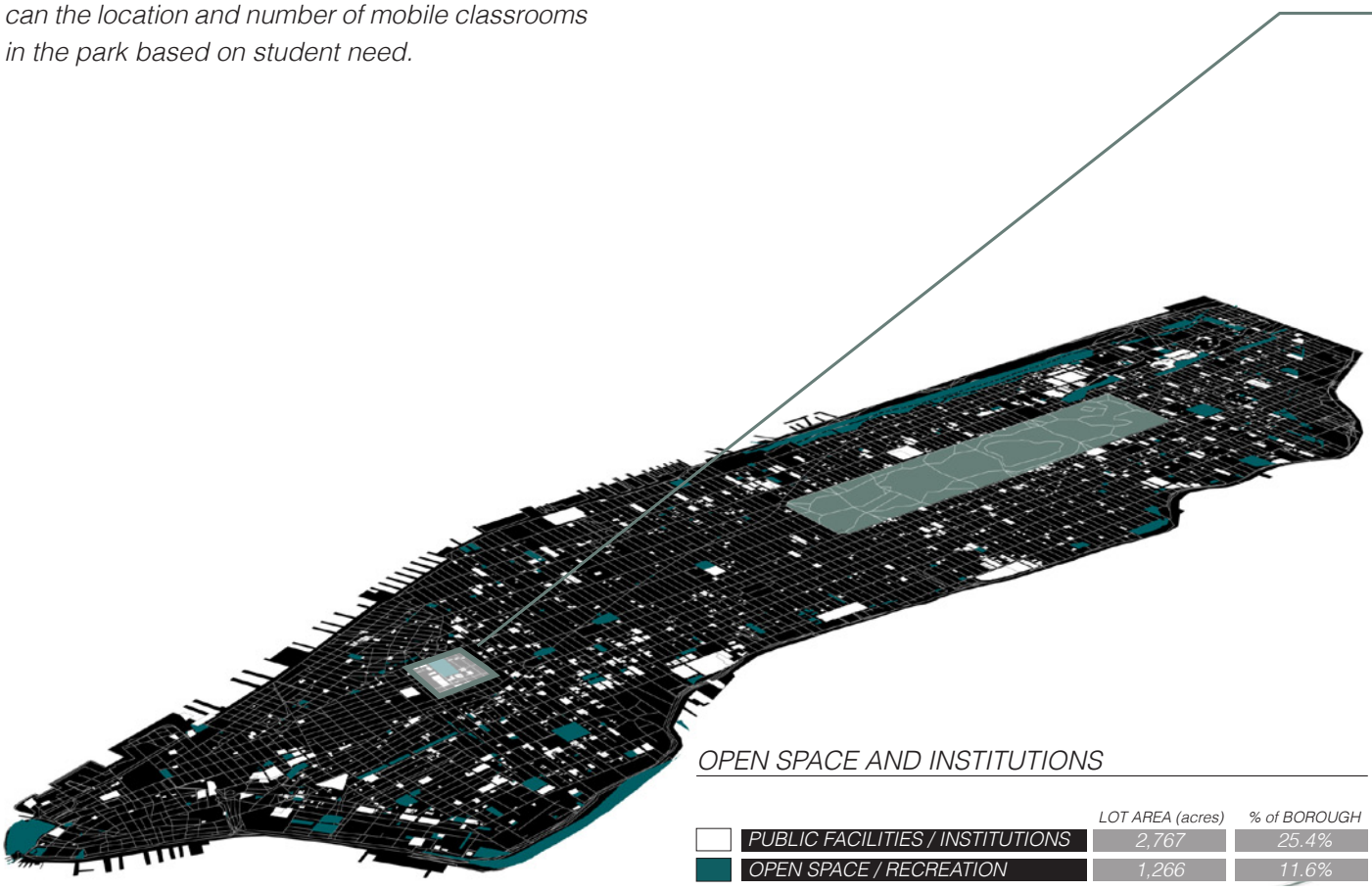


FIGURE 2.17
NYU campus network.

SCENARIO 03

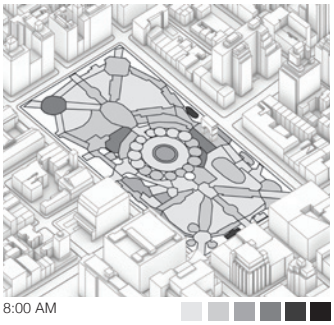
By understanding the way students use public spaces, a new kind of model can be adapted and deployed in these spaces in order to bring the classroom to the student. Washington Square Park is at the heart of NYU and as use of the park changes variably throughout the day, so to can the location and number of mobile classrooms in the park based on student need.



OPEN SPACE AND INSTITUTIONS

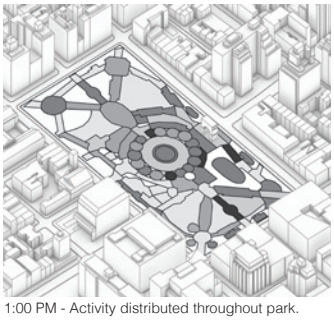
		LOT AREA (acres)	*% of BOROUGH*
	PUBLIC FACILITIES / INSTITUTIONS	*2,767*	*25.4%*
	OPEN SPACE / RECREATION	*1,266*	*11.6%*

ACTIVITY MAPPING

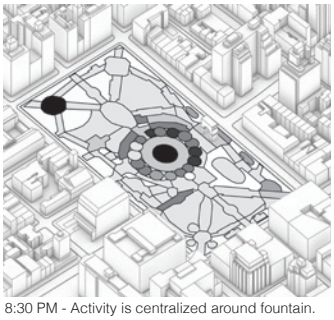


8:00 AM

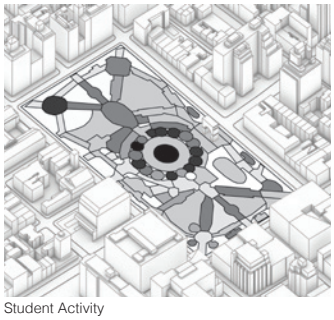
Light Use — Heavy Use



1:00 PM - Activity distributed throughout park.

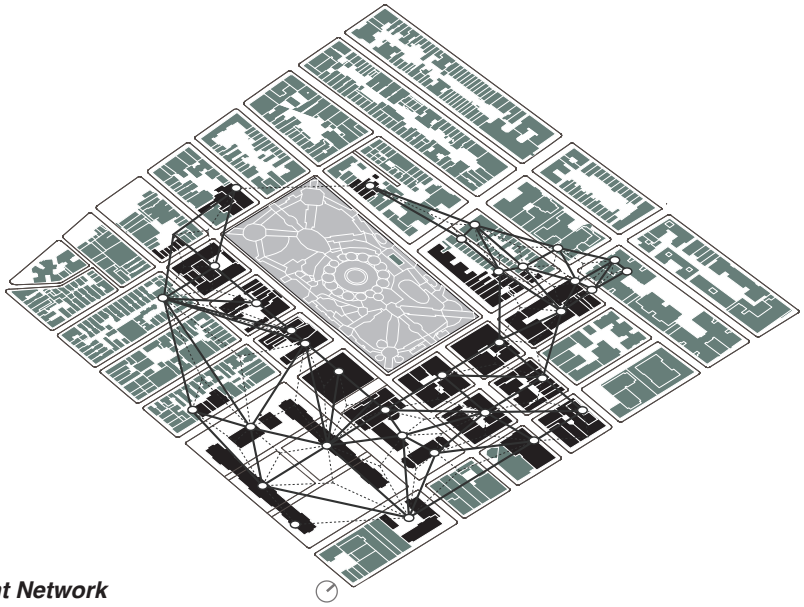


8:30 PM - Activity is centralized around fountain.

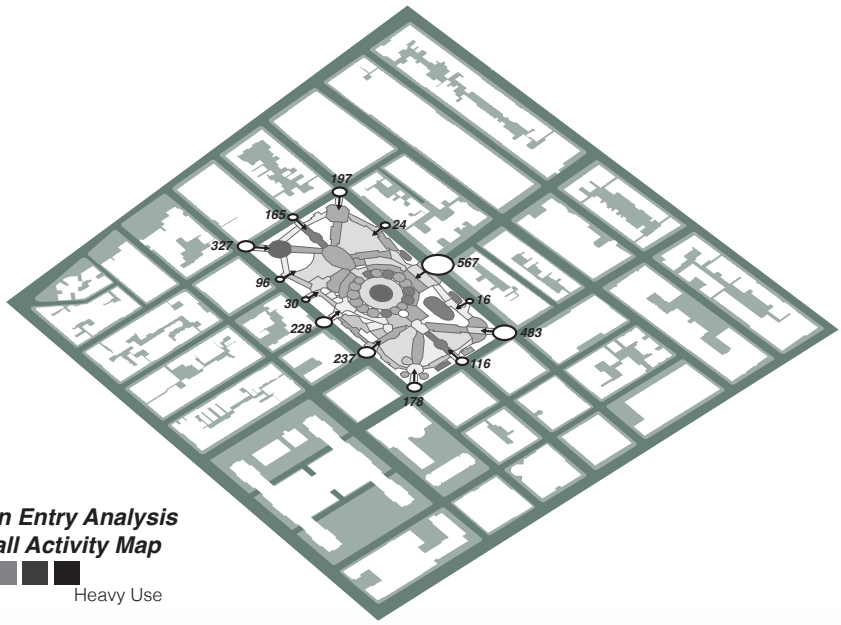


Student Activity

FIGURE 2.18
Mapping activity and use on a daily basis at Washington Square Park.

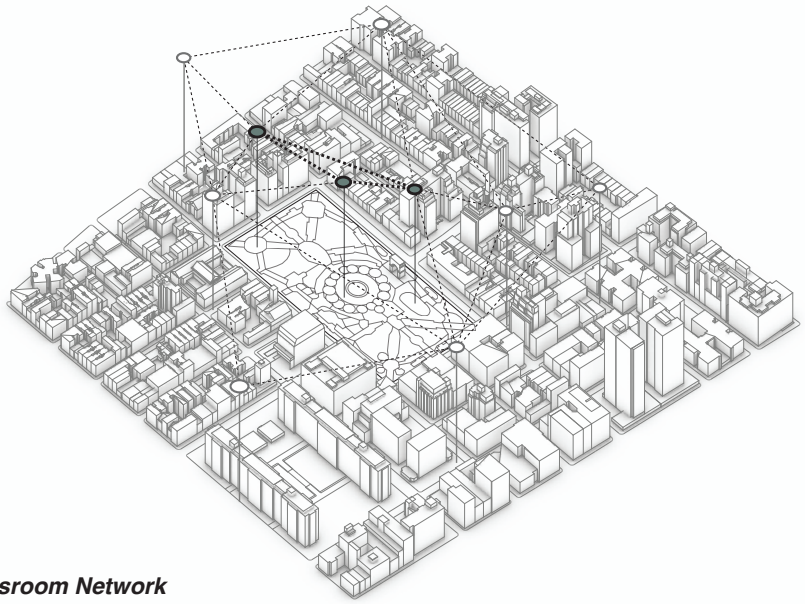


NYU Student Network



Pedestrian Entry Analysis and Overall Activity Map

Light Use Heavy Use

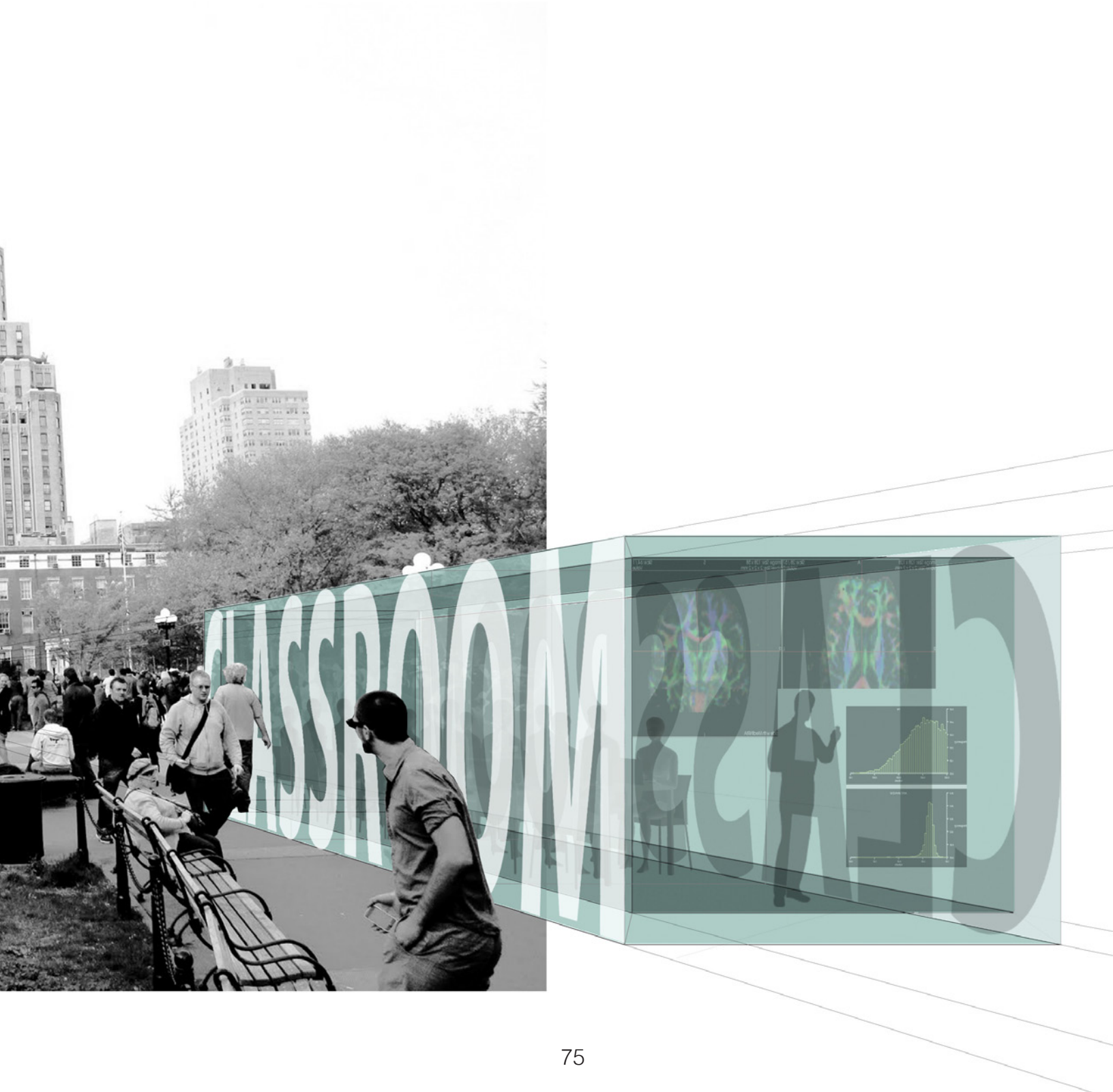


Mobile Classroom Network

FIGURE 2.19
Network distribution model.

SCENARIO 03

FIGURE 2.20
Mobile Classroom deployment.


CLASSROOM

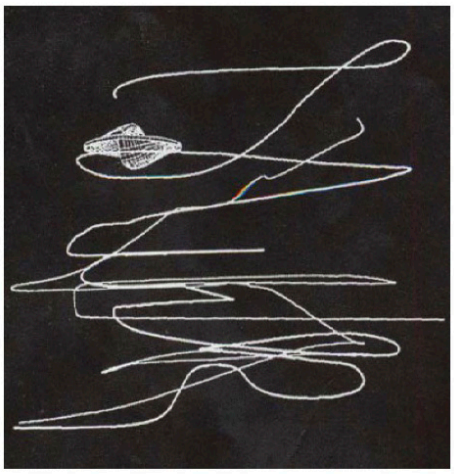
HYPERLINK

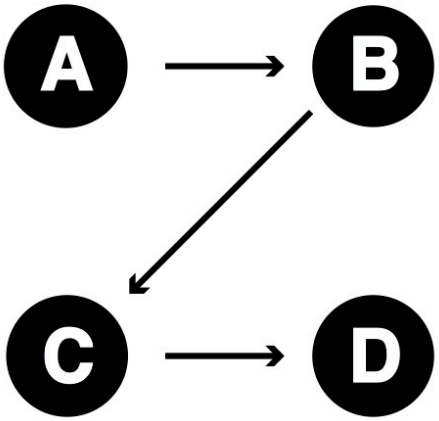
By understanding how students circulate online and interact with friends on social media sites, a new building circulation model can start to imitate this. The Hyperlink, which is the connections between websites, is a model that is no longer sequential, but chaotic as a network that allows one not only to move forward, but backwards, and side to side.

Narrative - *path*

Sequential

Linear

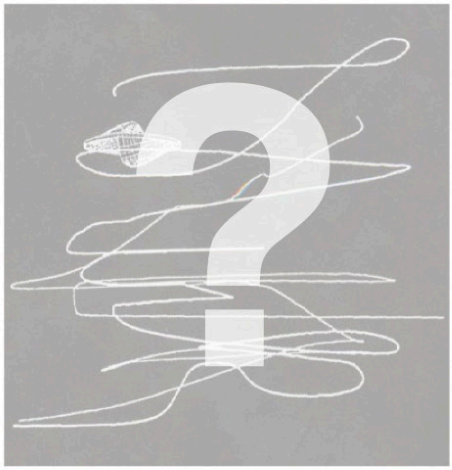




Hypertext - *network*

Non-Sequential

Non-Linear



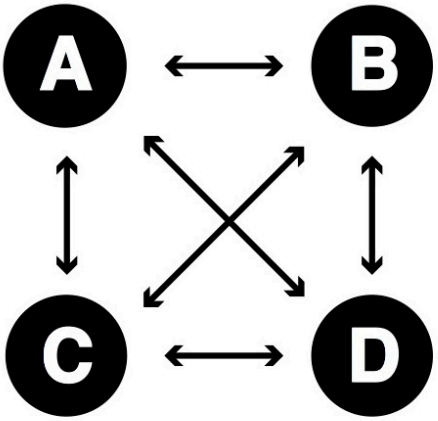
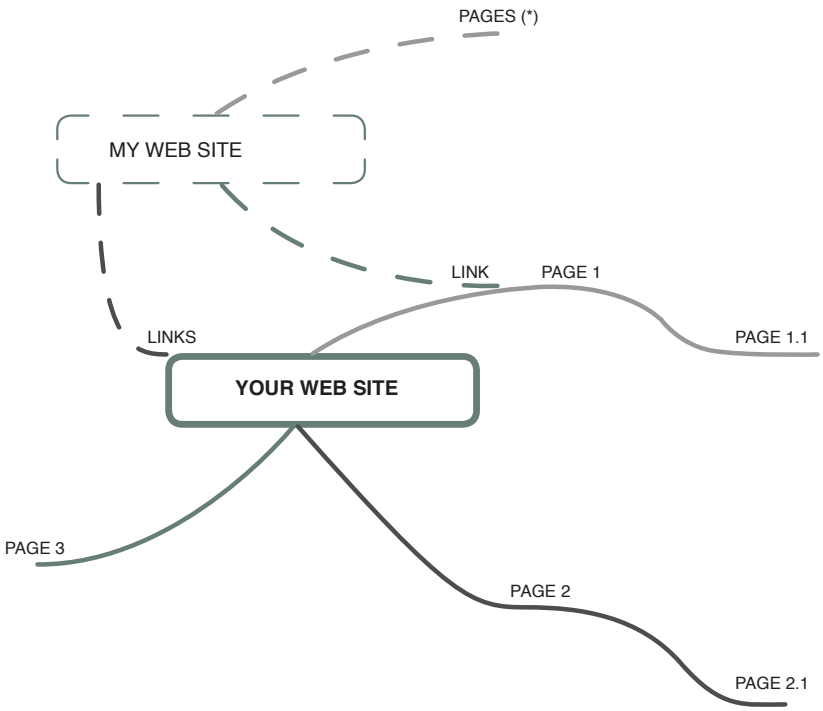


FIGURE 2.21
Hyperlink circulation network.

Internet Hyperlink



Spatial Hyperlink

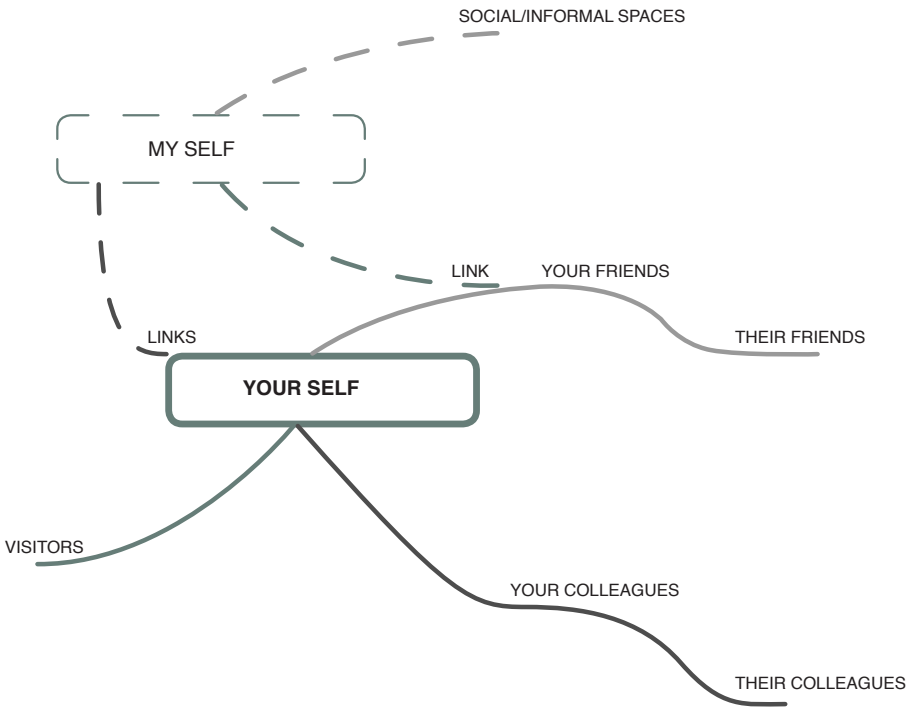


FIGURE 2.22
Internet Hyperlink vs. Spatial Hyperlink.

SITE ANALYSIS

By analyzing the proximity of existing universities in Manhattan, the location of Chelsea was clearly a growing influence on the future of learning in NYC as a number of universities are moving or expanding to this location. One of these universities is Parsons, a liberal arts college that has called NYC its home for a century. As a part of this growth, I propose a new building as a part of the campus that doesn't distinguish itself as a certain kind of school, but can adapt to meet the needs of the future market.

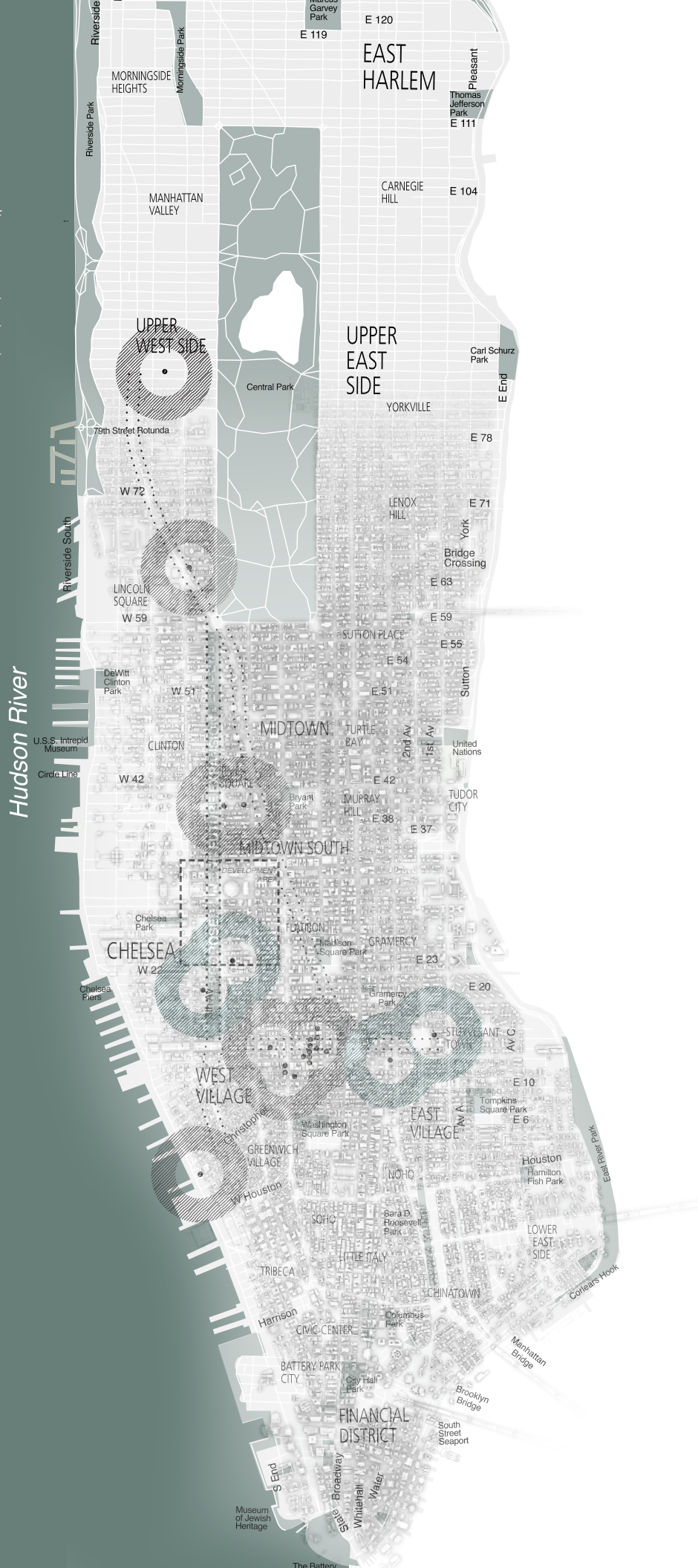


FIGURE 2.23
Parsons New School Map of NYC.

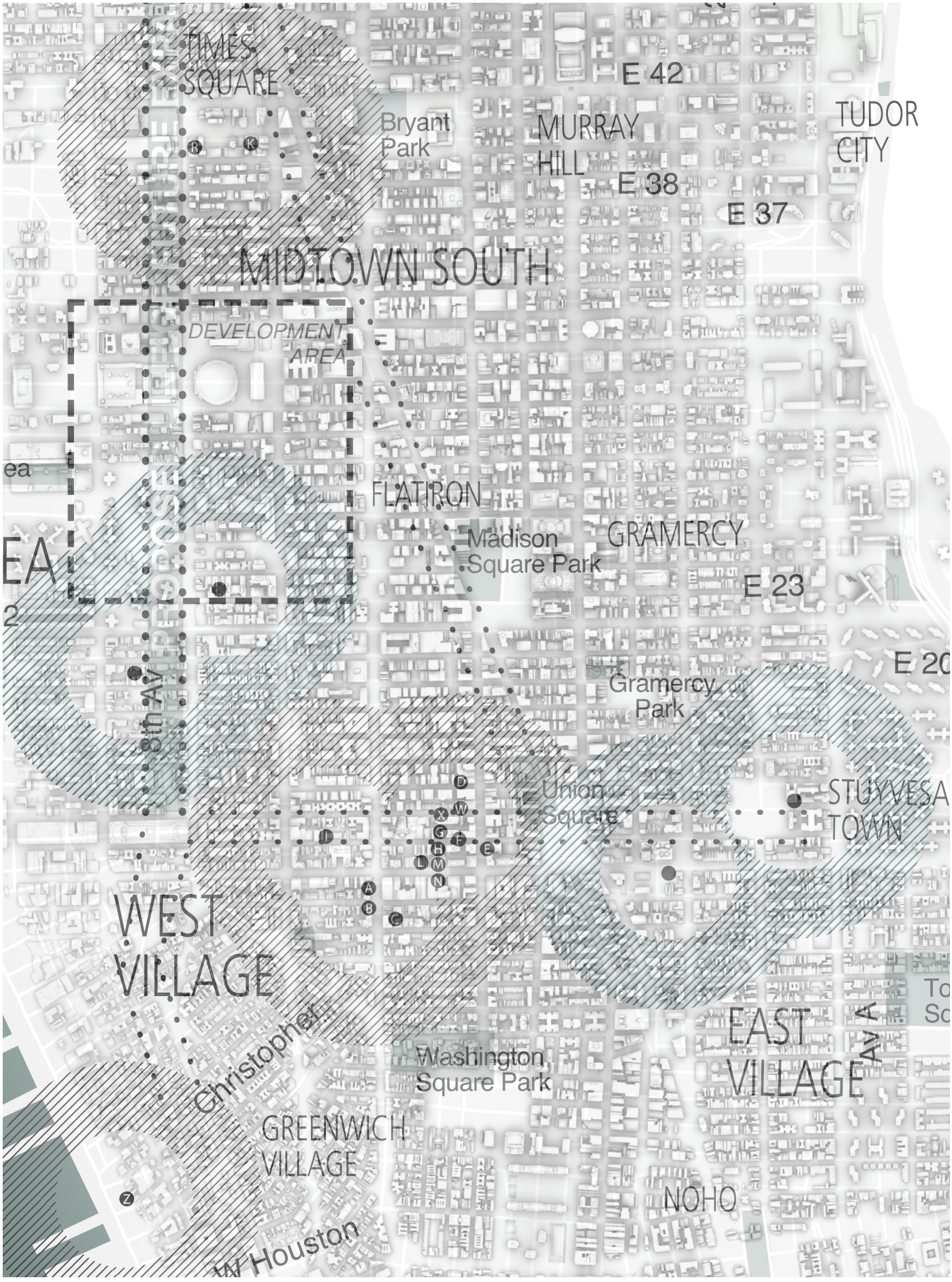


FIGURE 2.24
Parsons network location.

SITE ANALYSIS

ZONING POTENTIAL SITES

Manufacturing Districts: M1

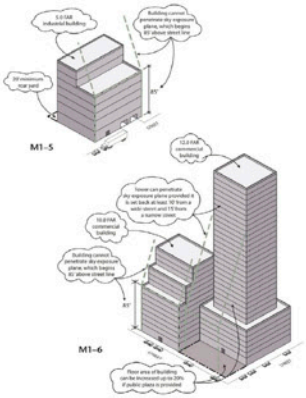
M1 districts range from the Garment District in Manhattan and Port Morris in the Bronx with multistory lofts, to parts of Red Hook or College Point with one- or two-story warehouses characterized by loading bays. M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. Nearly all industrial uses are allowed in M1 districts if they meet the stringent M1 performance standards. Offices, hotels and most retail uses are also permitted. Certain community facilities, such as hospitals, are allowed in M1 districts only by special permit, but houses of worship are allowed as-of-right.

In M1-5A and M1-5B districts mapped in SoHo/NoHo, artists may occupy joint living-work quarters as an industrial use. Other than M1 districts paired with residence districts in Special Mixed Use Districts, M1-5M and M1-6M districts (by special permit) and M1-D districts (by authorization or certification) are the only manufacturing districts in which residences are permitted. However, in M1-6D districts, residential use may be allowed as-of-right on zoning lots under certain conditions.

In M1-5M and M1-6M districts, mapped in parts of Chelsea, space in an industrial building may be converted to residential use, provided a specified amount of floor area is preserved for particular industrial and commercial uses.

Floor area ratios in M1 districts range from 1.0 to 10.0, depending on location; building height and setbacks are controlled by a sky exposure plane which may be penetrated by a tower in certain districts. Although new industrial buildings are usually low-rise structures that fit within sky exposure planes, commercial and community facility buildings can be constructed as towers in M1-3 through M1-6 districts. In the highest density manufacturing district, M1-6, mapped only in Manhattan, an FAR of 12 can be achieved with a bonus for a public plaza. Except along district boundaries, no side yards are required. Rear yards at least 20 feet deep are usually required, except within 100 feet of a corner.

Parking and loading requirements vary with district and use. M1-1, M1-2 and M1-3 districts are subject to parking requirements based on the type of use and size of an establishment. For example, a warehouse in an M1-1 district requires one off-street parking space per 2,000 square feet of floor area or per every three employees, whichever would be less. Parking is not required in Long Island City or M1-4, M1-5 and M1-6 districts, mapped mainly in Manhattan. Requirements for loading berths of specified dimensions differ according to district, size and type of use.



M1 Manufacturing Districts

M1	M1-1	M1-2	M1-3	M1-4	M1-5	M1-6
FAR (max)	1.0	2.0	5.0	2.0	5.0	10.0*
Parking	required	required	required	not required	not required	not required

Commercial Districts: C6

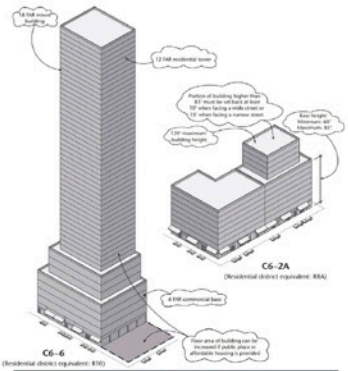
C6 districts permit a wide range of high-bulk commercial uses requiring a central location. Most C6 districts are in Manhattan, Downtown Brooklyn and Downtown Jamaica; a C6-3D district is mapped in the Civic Center area of the Bronx. Corporate headquarters, large hotels, department stores and entertainment facilities in high-rise mixed buildings are permitted in C6 districts.

C6-1, C6-2 and most C6-3 districts, typically mapped in areas outside central business cores, such as the Lower East Side and Chelsea, have a commercial floor area ratio (FAR) of 6.0; the C6-3D district has an FAR of 9.0. C6-4 through C6-9 districts, typically mapped within the city's major business districts, have a maximum FAR of 10.0 or 15.0, exclusive of any applicable bonus. Floor area may be increased by a bonus for a public plaza or Inclusionary Housing.

C6-2A, C6-3A, C6-3X and C6-4A are contextual districts with maximum building heights. C6-3D and C6-4X districts allow towers above a building base; special rules determine the tower's height and articulation. All other C6 districts allow towers to penetrate a sky exposure plane and do not require a contextual base.

C6 districts are widely mapped within special districts. C6-4.5, C6-5.5, C6-6.5 and C6-7T districts are mapped only within the Special Midtown District and have unique floor area ratios and bonus rules. C6-1G, C6-2G, C6-2M and C6-4M districts are mapped in Chinatown and Chelsea and in the Special Garment Center District, and have rules for the conversion of non-residential space to residential use.

C6 districts are well served by mass transit, and off-street parking is generally not required, except within the C6-3D district.



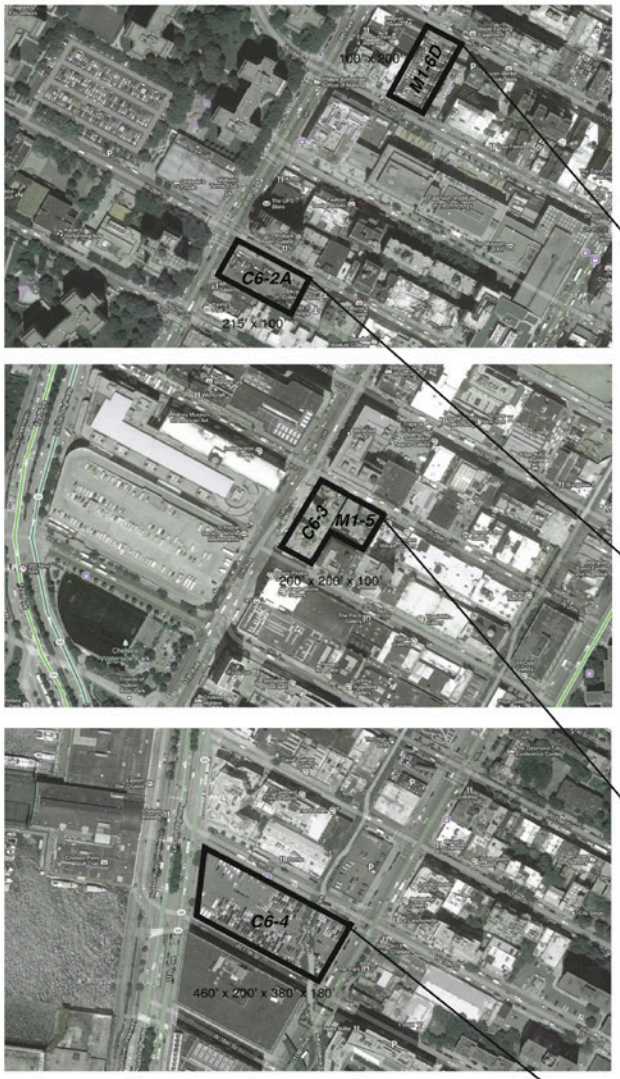
COOPER UNION ZONING

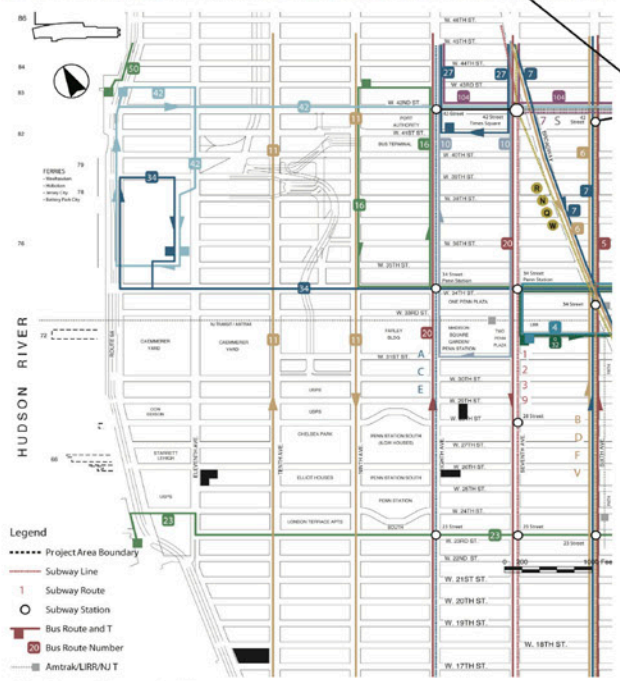
C6 Commercial Districts

	C6-1	C6-1A	C6-2	C6-2A	C6-3	C6-3A	C6-3D	C6-3X	C6-4	C6-4A	C6-4M	C6-5	C6-6	C6-7	C6-7T	C6-8	C6-9
Commercial FAR	3.00	3.00*	6.00*	6.0	9.00*	6.0	9.0	6.0	10.0*	10.0	10.0	10.0*	10.0*	10.0*	12.0*	10.0*	10.0*
Residential FAR	3.00*	3.00*	6.02**	6.02*	7.52*	6.02*	9.0	6.0	10.0*	10.0	10.0*	10.0*	10.0*	10.0*	12.0*	10.0*	10.0*
Residential Open Space Equivalent	3.00	3.00	6.02	6.02	7.52	6.02	9.0	6.0	10.0	10.0	10.0	10.0	10.0	10.0	12.0	10.0	10.0
Maximum Height	30'-0"	30'-0"	30'-0"	30'-0"	40'-0"	40'-0"	85'-0"	60'-0"	85'-0"	85'-0"	85'-0"	85'-0"	85'-0"	85'-0"	85'-0"	85'-0"	85'-0"

* 6.0 FAR on wide streets outside the Manhattan Core under Quality Housing Program
* 7.2 FAR on wide streets outside the Manhattan Core under Quality Housing Program
* FAR bonus of up to 20% for a public plaza
* Increase in FAR with Inclusionary Housing Program bonus

Manhattan Zoning Analysis

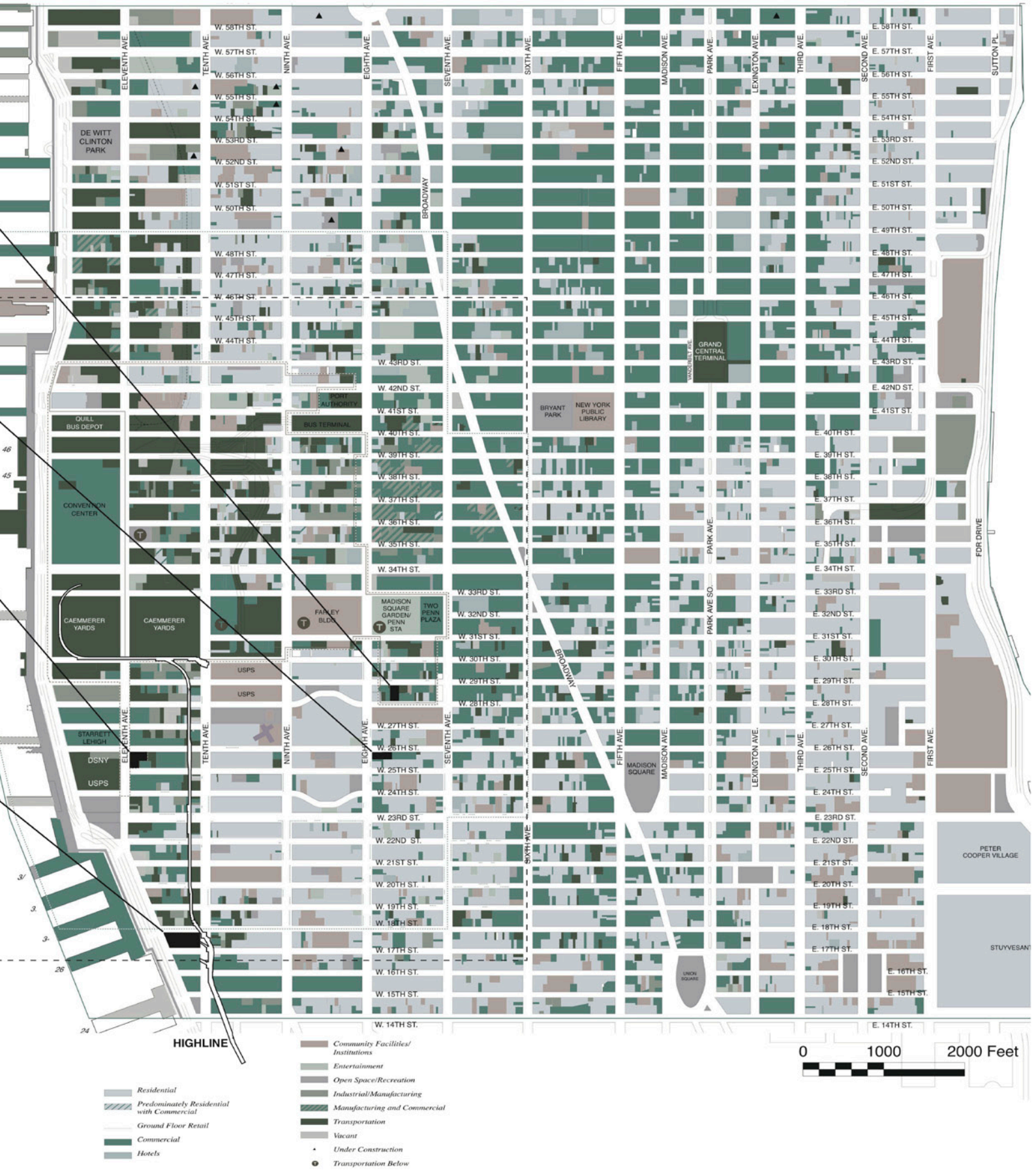




Chelsea Transit Map

FIGURE 2.25

Zoning analysis


W. 58TH ST.
W. 57TH ST.
W. 56TH ST.
W. 55TH ST.
W. 54TH ST.
W. 53RD ST.
W. 52ND ST.
W. 51ST ST.
W. 50TH ST.
W. 48TH ST.
W. 47TH ST.
W. 46TH ST.
W. 45TH ST.
W. 44TH ST.
W. 43RD ST.
W. 42ND ST.
W. 41ST ST.
W. 40TH ST.
W. 39TH ST.
W. 38TH ST.
W. 37TH ST.
W. 36TH ST.
W. 35TH ST.
W. 34TH ST.
W. 33RD ST.
W. 32ND ST.
W. 31ST ST.
W. 30TH ST.
W. 29TH ST.
W. 28TH ST.
W. 27TH ST.
W. 26TH ST.
W. 25TH ST.
W. 24TH ST.
W. 23RD ST.
W. 22ND ST.
W. 21ST ST.
W. 20TH ST.
W. 19TH ST.
W. 18TH ST.
W. 17TH ST.
W. 16TH ST.
W. 15TH ST.
W. 14TH ST.
E. 58TH ST.
E. 57TH ST.
E. 56TH ST.
E. 55TH ST.
E. 54TH ST.
E. 53RD ST.
E. 52ND ST.
E. 51ST ST.
E. 50TH ST.
E. 49TH ST.
E. 48TH ST.
E. 47TH ST.
E. 46TH ST.
E. 45TH ST.
E. 44TH ST.
E. 43RD ST.
E. 42ND ST.
E. 41ST ST.
E. 40TH ST.
E. 39TH ST.
E. 38TH ST.
E. 37TH ST.
E. 36TH ST.
E. 35TH ST.
E. 34TH ST.
E. 33RD ST.
E. 32ND ST.
E. 31ST ST.
E. 30TH ST.
E. 29TH ST.
E. 28TH ST.
E. 27TH ST.
E. 26TH ST.
E. 25TH ST.
E. 24TH ST.
E. 23RD ST.
E. 22ND ST.
E. 21ST ST.
E. 20TH ST.
E. 19TH ST.
E. 18TH ST.
E. 17TH ST.
E. 16TH ST.
E. 15TH ST.
E. 14TH ST.
ELEVENTH AVE.
TENTH AVE.
NINTH AVE.
EIGHTH AVE.
SEVENTH AVE.
SIXTH AVE.
FIFTH AVE.
MADISON AVE.
PARK AVE.
LEXINGTON AVE.
THIRD AVE.
SECOND AVE.
FIRST AVE.
SUTTON PL.
BROADWAY
PARK AVE SO.
VANDERBILT AVE.
FDR DRIVE
DE WITT CLINTON PARK
GRAND CENTRAL TERMINAL
BRYANT PARK
NEW YORK PUBLIC LIBRARY
PORT AUTHORITY
BUS TERMINAL
QUILL BUS DEPOT
CONVENTION CENTER
CAEMMERER YARDS
CAEMMERER YARDS
FARLEY BLDG
MADISON SQUARE GARDEN/ PENN STA
TWO PENN PLAZA
USPS
USPS
STARRETT LEHIGH
DSNY
USPS
MADISON SQUARE
UNION SQUARE
PETER COOPER VILLAGE
STUYVESANT
HIGHLINE
0
1000
2000 Feet
Residential
Predominately Residential with Commercial
Ground Floor Retail
Commercial
Hotels
Community Facilities/ Institutions
Entertainment
Open Space/Recreation
Industrial/Manufacturing
Manufacturing and Commercial
Transportation
Vacant
Under Construction
Transportation Below

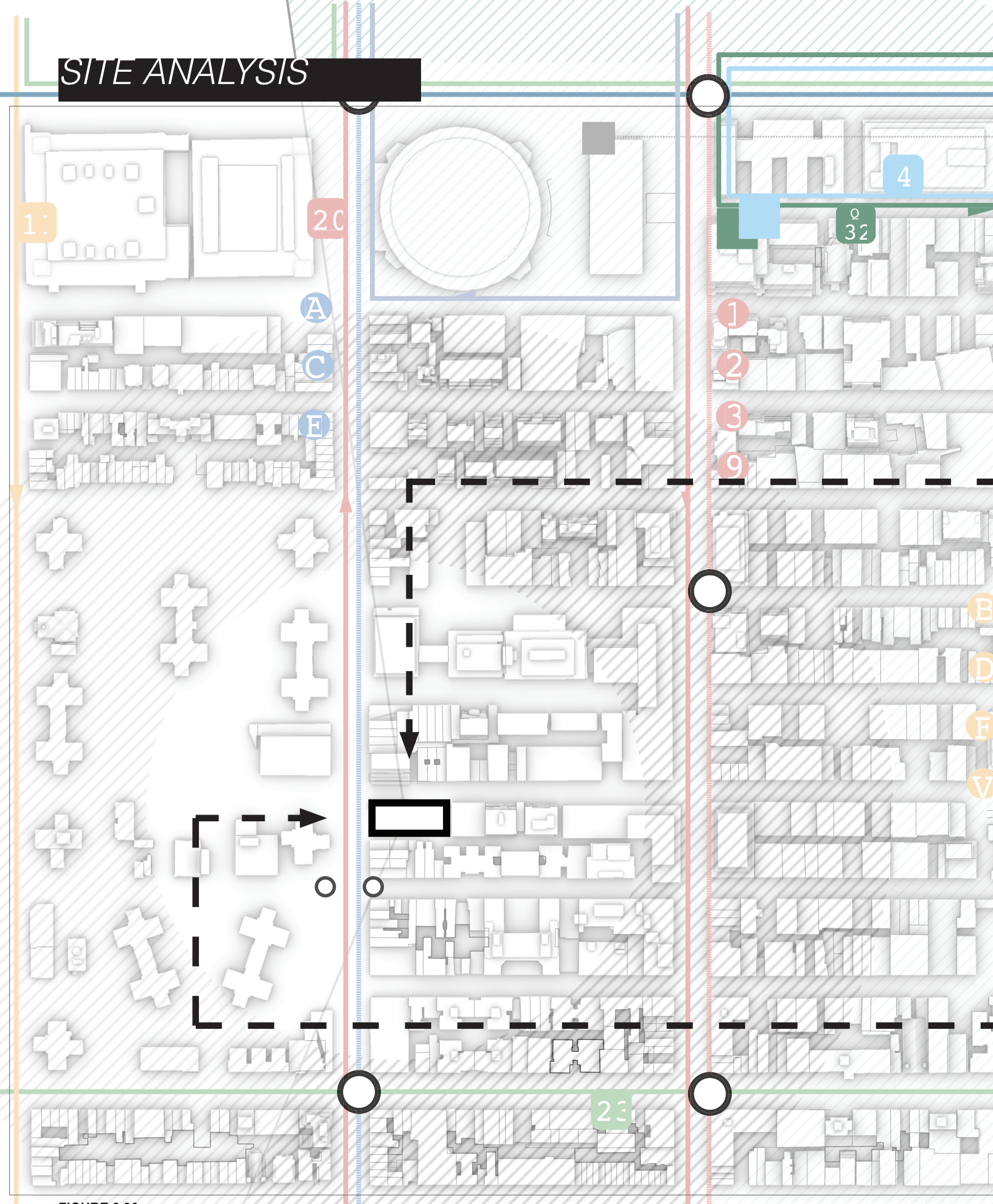


FIGURE 2.26
Subway network and site location.

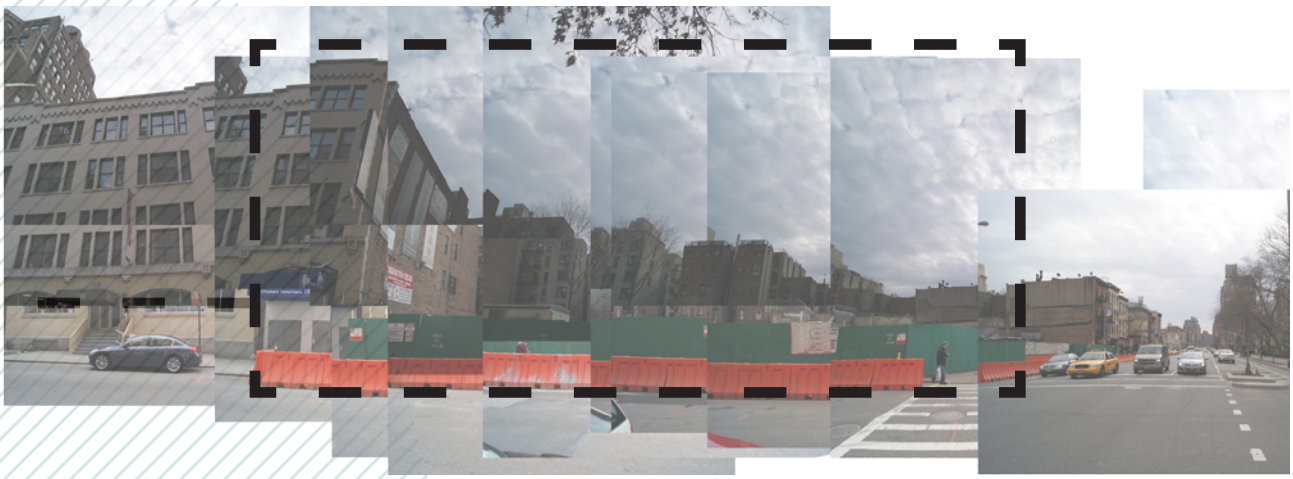


FIGURE 2.27
Existing north facing elevation.

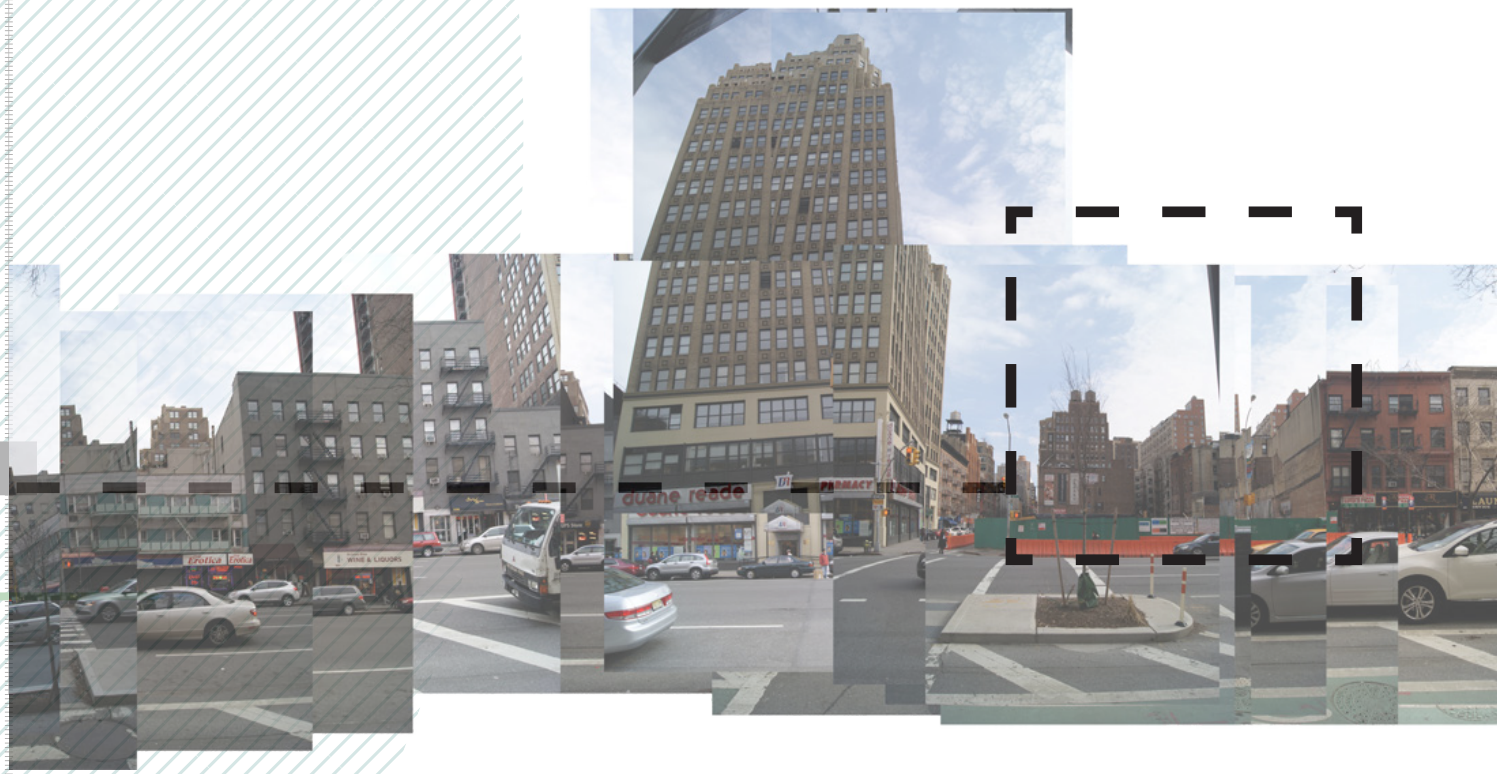


FIGURE 2.28
Existing west facing elevation.

FIGURE 2.29
View looking west on one way street.

FIGURE 2.30
View looking east on one way primary road.

FIGURE 2.31
View looking northeast showing adjacent convenience store.

FIGURE 2.32
Street condition

SCHEMATIC DESIGN

Early in the design phase, the need to allow students to freely circulate between classroom and social spaces was utilized through a mobius path circulation that extends vertically. Along this path, the hyperlink acts to renavigate a student when a space is private and being used for classroom function.

FIGURE 2.33
Hyperlink intervening is circulation path.

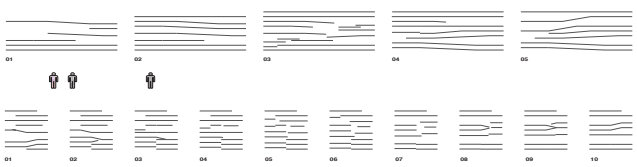


FIGURE 2.34
Section iterations.

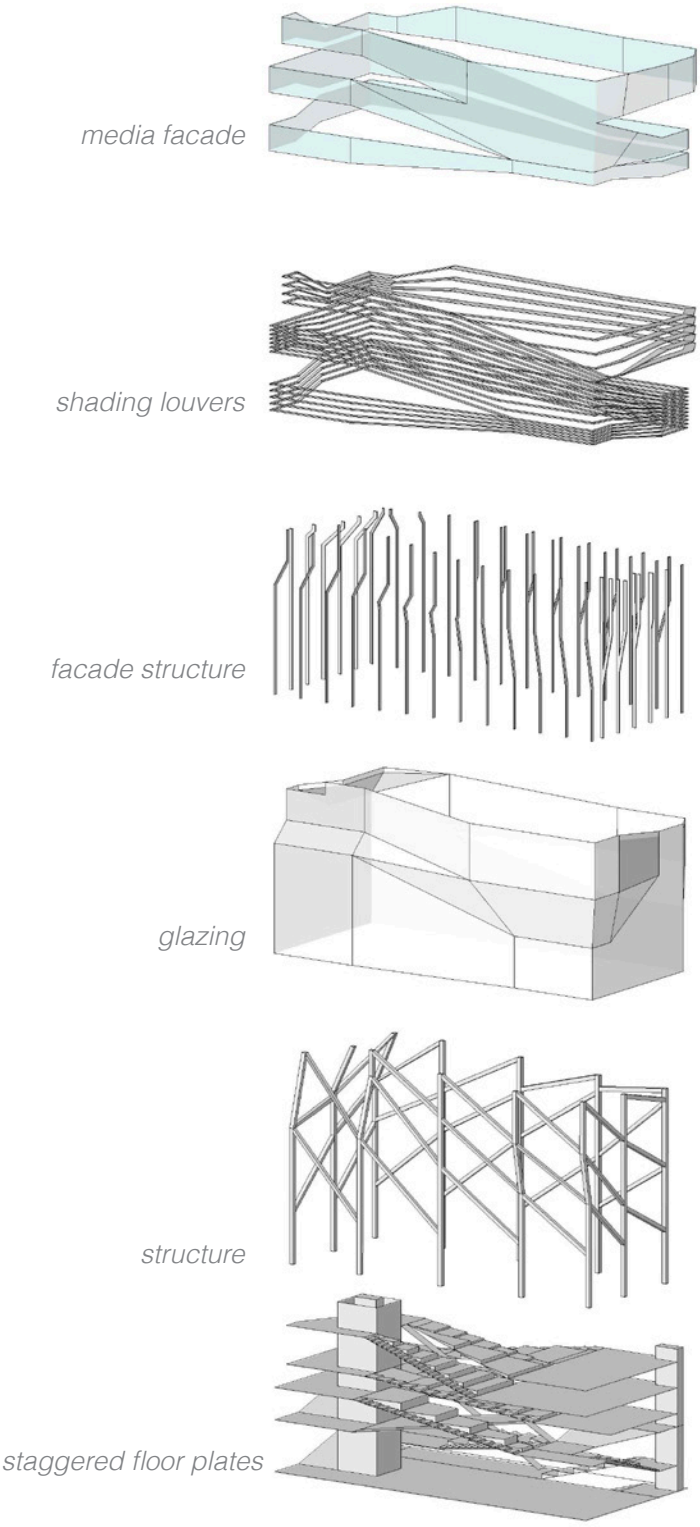
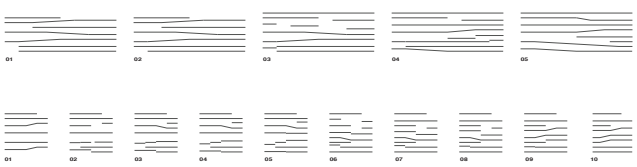


FIGURE 2.35
Exploded Axonometric.



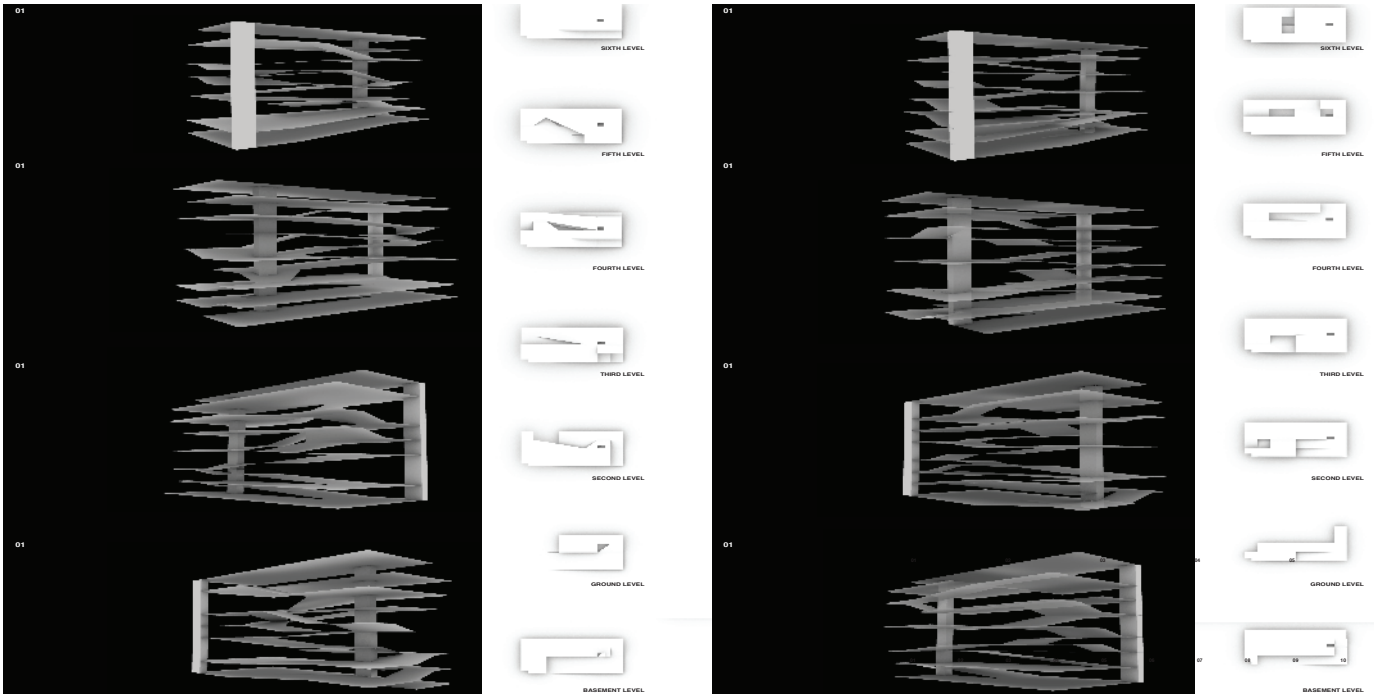


FIGURE 2.36
Early floor plate and circulation schemes.

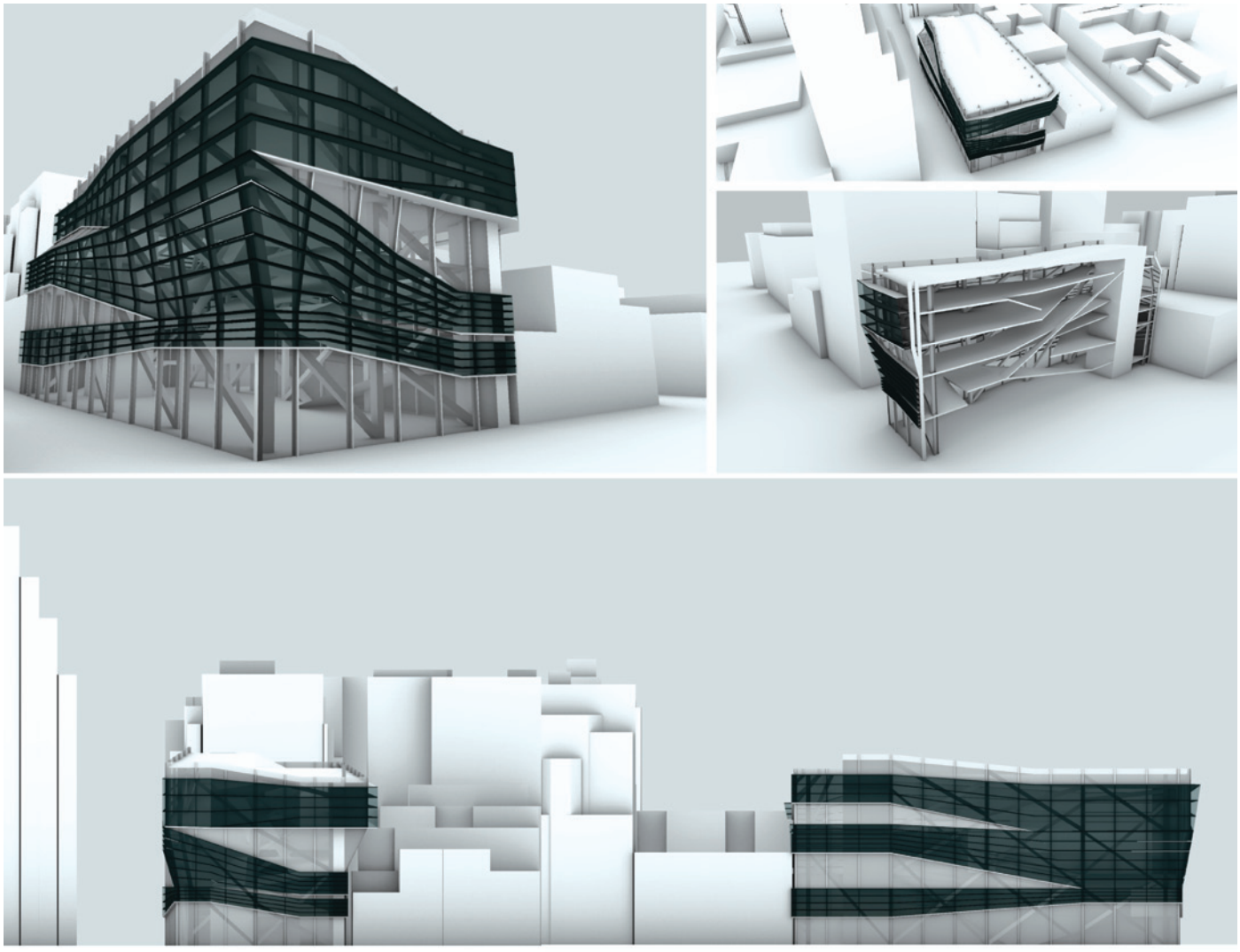


FIGURE 2.37

Initial Proposal.

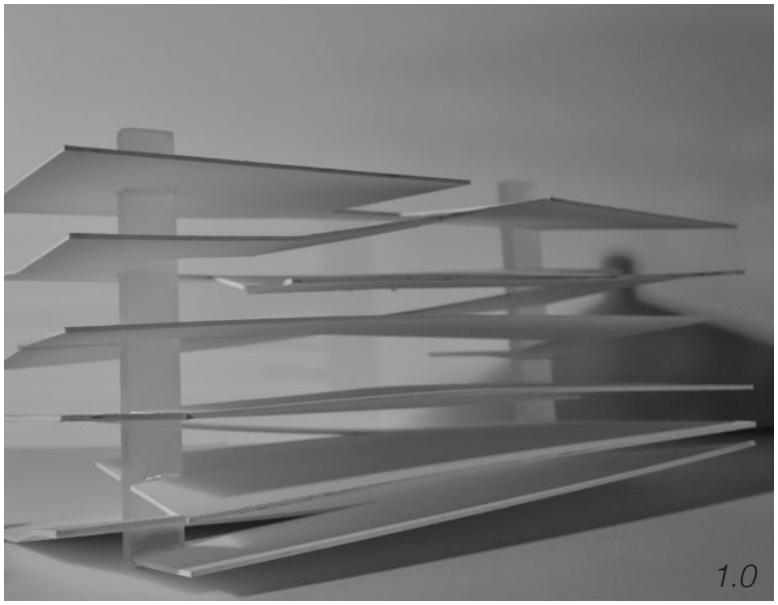


FIGURE 2.38
Floor plate and core study model.
-museum board and resin

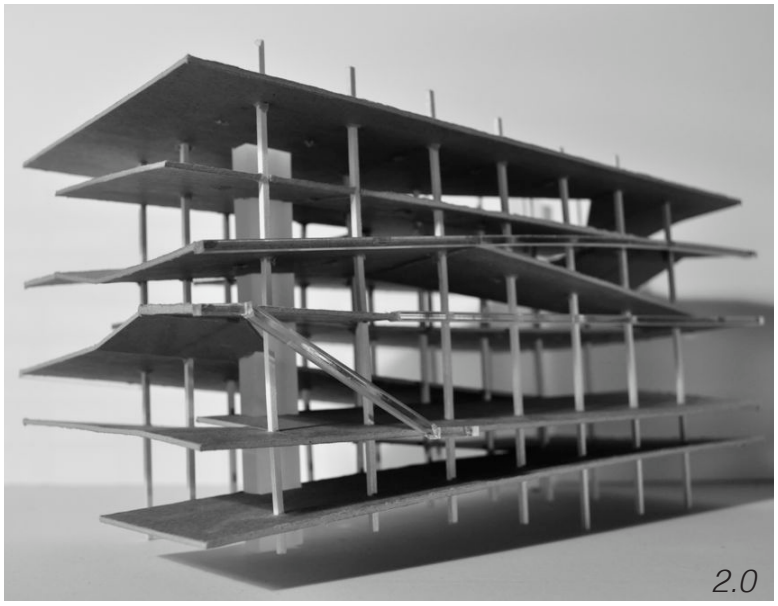


FIGURE 2.39
Floor plate, structure, and core study model.
-chipboard, basswood sticks, and resin

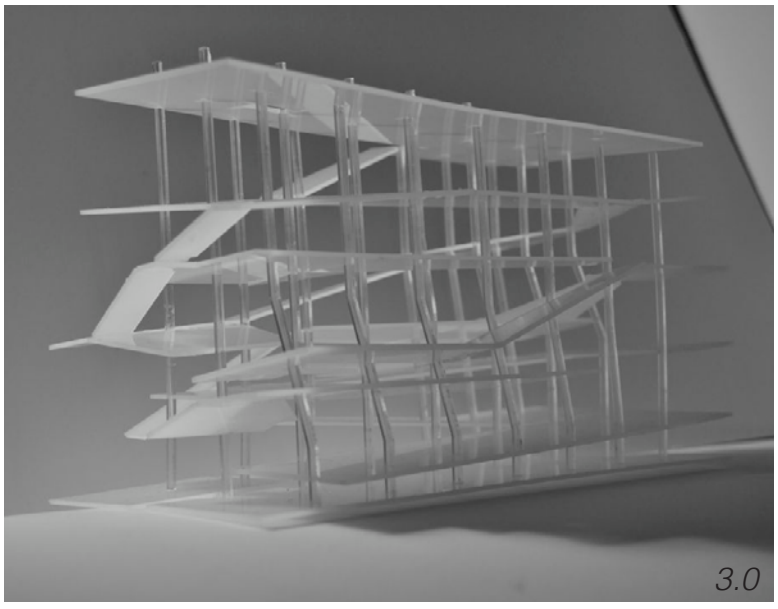
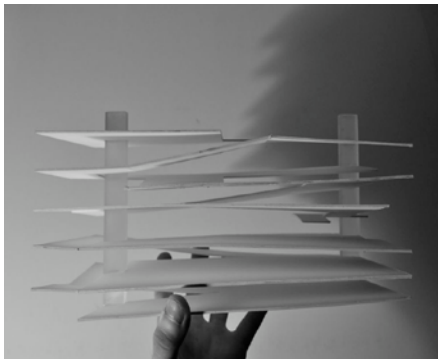
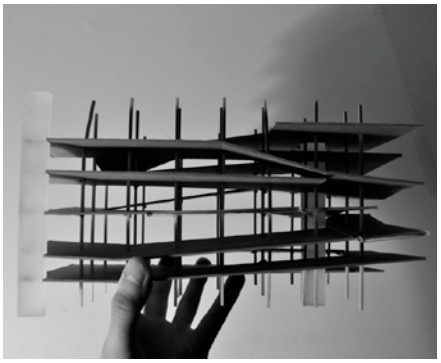


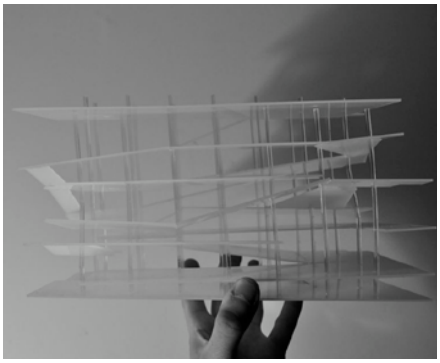
FIGURE 2.40
structure and circulation study model.
-acrylic



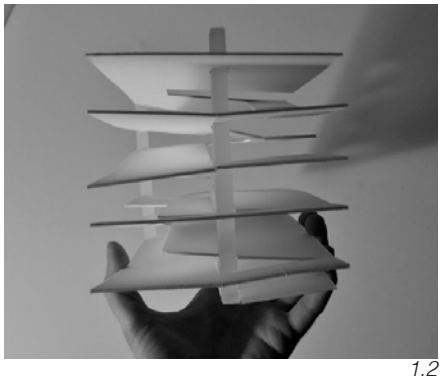
1.1



2.1

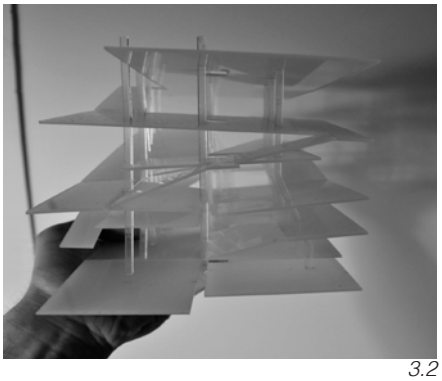


3.1

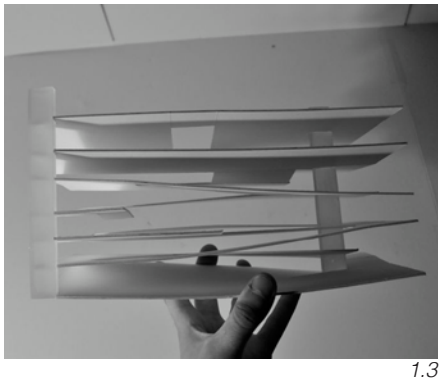


1.2

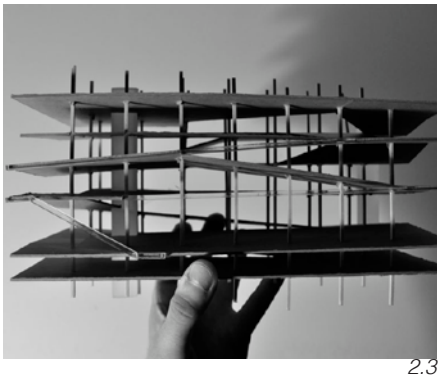
2.2



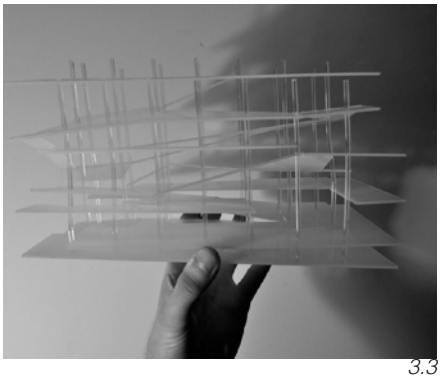
3.2



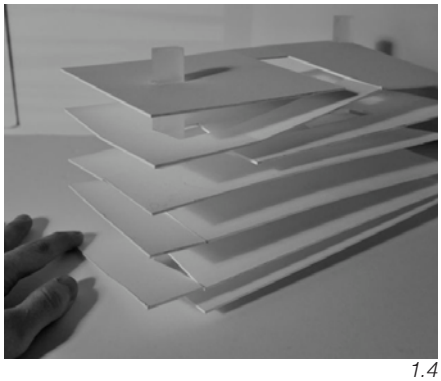
1.3



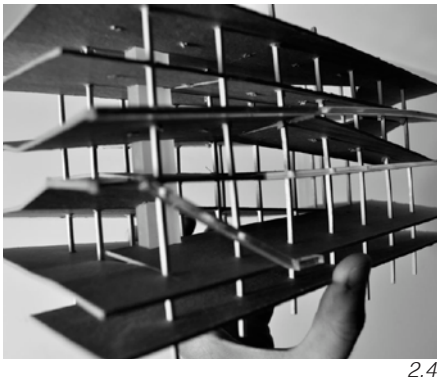
2.3



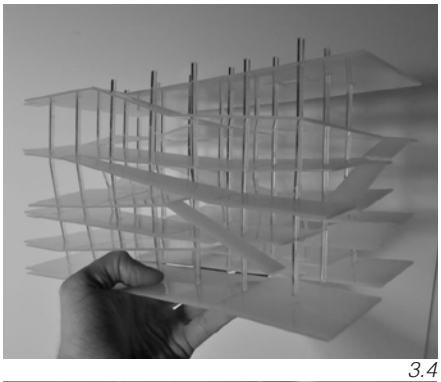
3.3



1.4



2.4



3.4

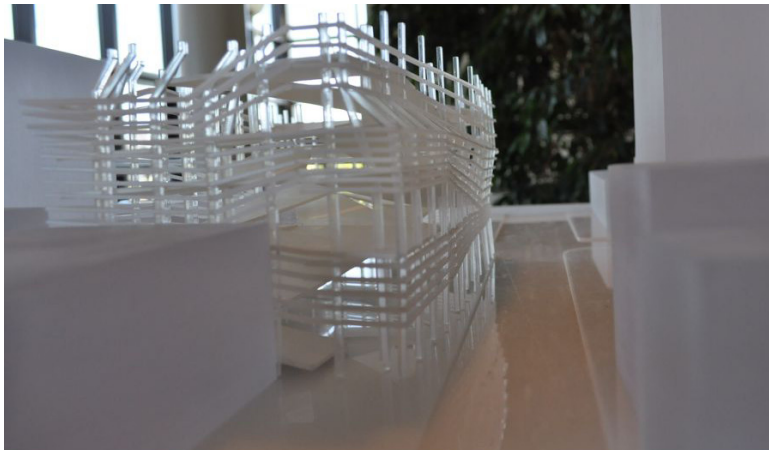
1.5

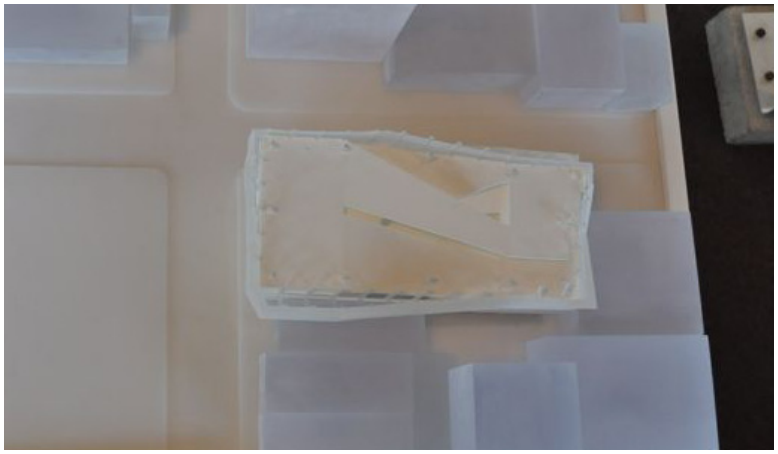
2.5

3.5

SCHEMATIC DESIGN

The initial proposal is a transparent shell consisting of a split open floor plan system that extends beyond its footprint to maximize available classroom floor space. The facade is a split system that creates openings based on the interaction within the building.





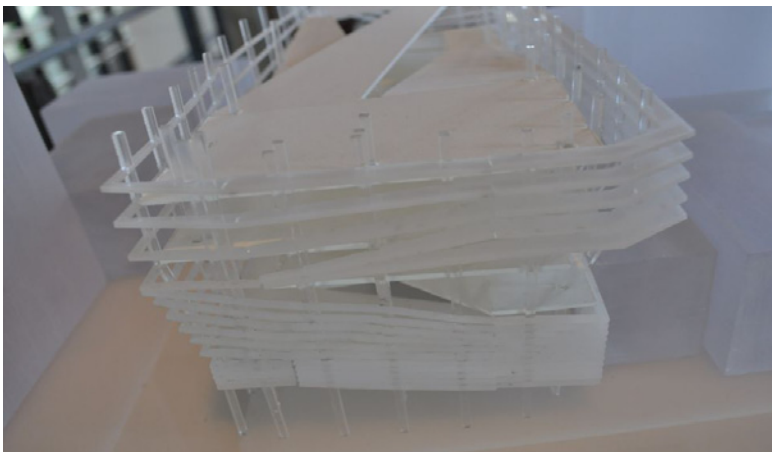
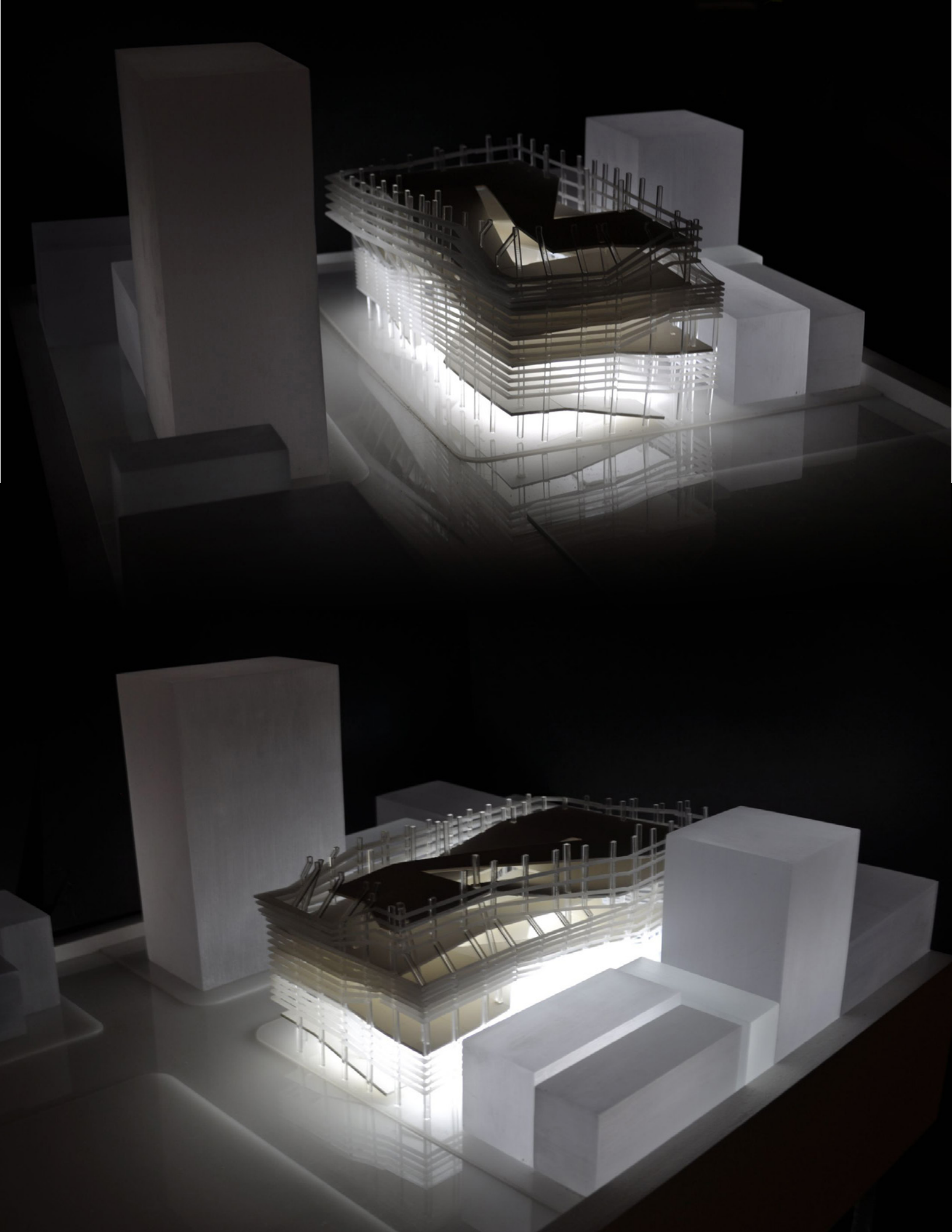


FIGURE 2.41
Initial proposal in context
-resin, museum board, acrylic on painted mdf base.



FINAL PROPOSAL

The final proposal expanded on the hyperlink as a way to create connections across floor levels. The facade acts to distinguish hyperlink circulation from ordinary circulation as it wraps and folds to support the stair and ramp system. The hyperlink exists on the periphery of the building to engage not only the interior space, but the exterior as well.

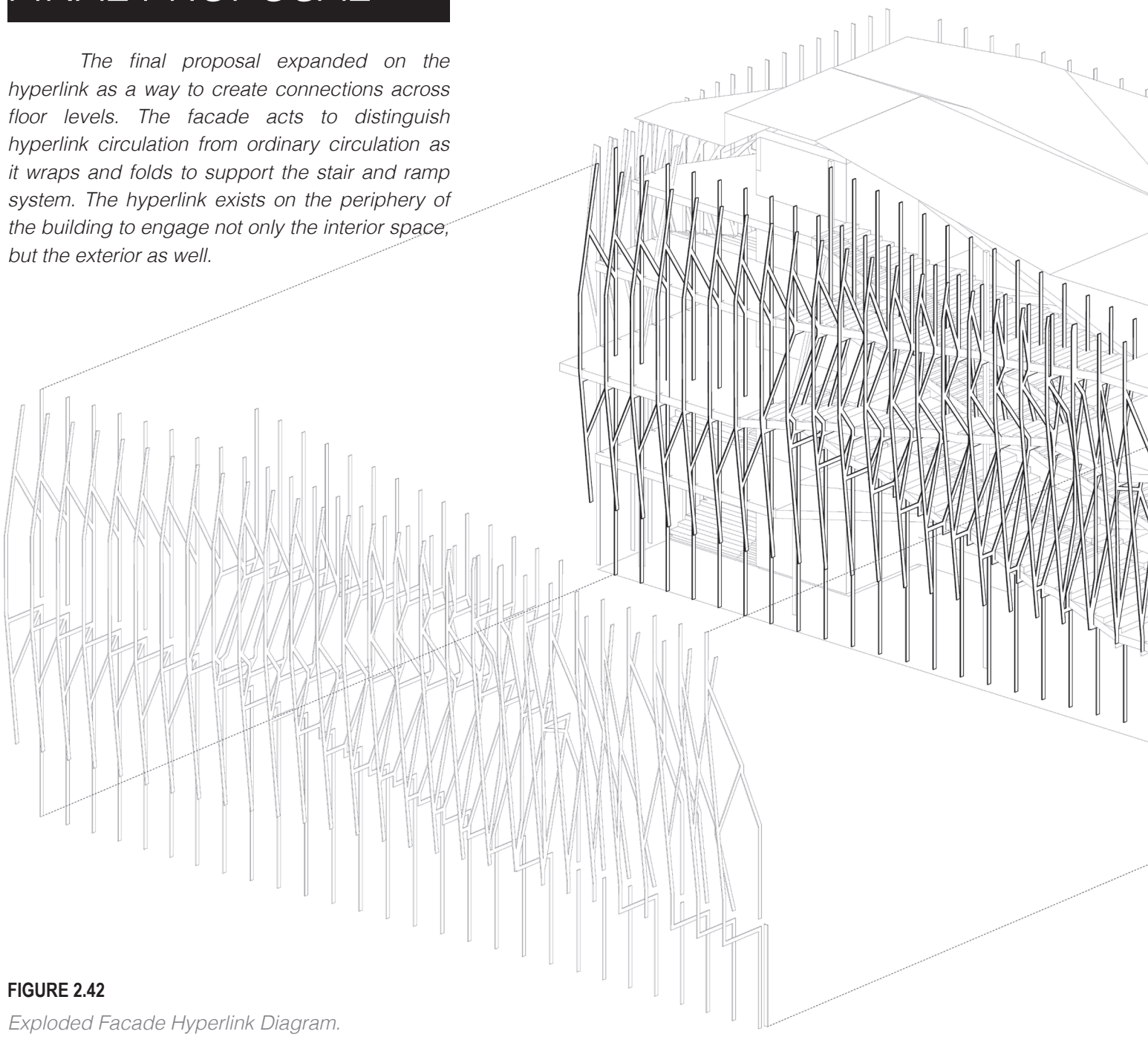
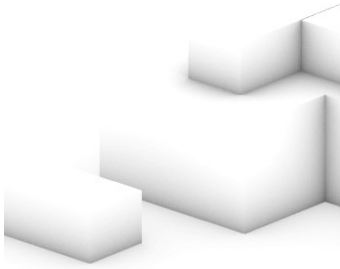


FIGURE 2.42

Exploded Facade Hyperlink Diagram.



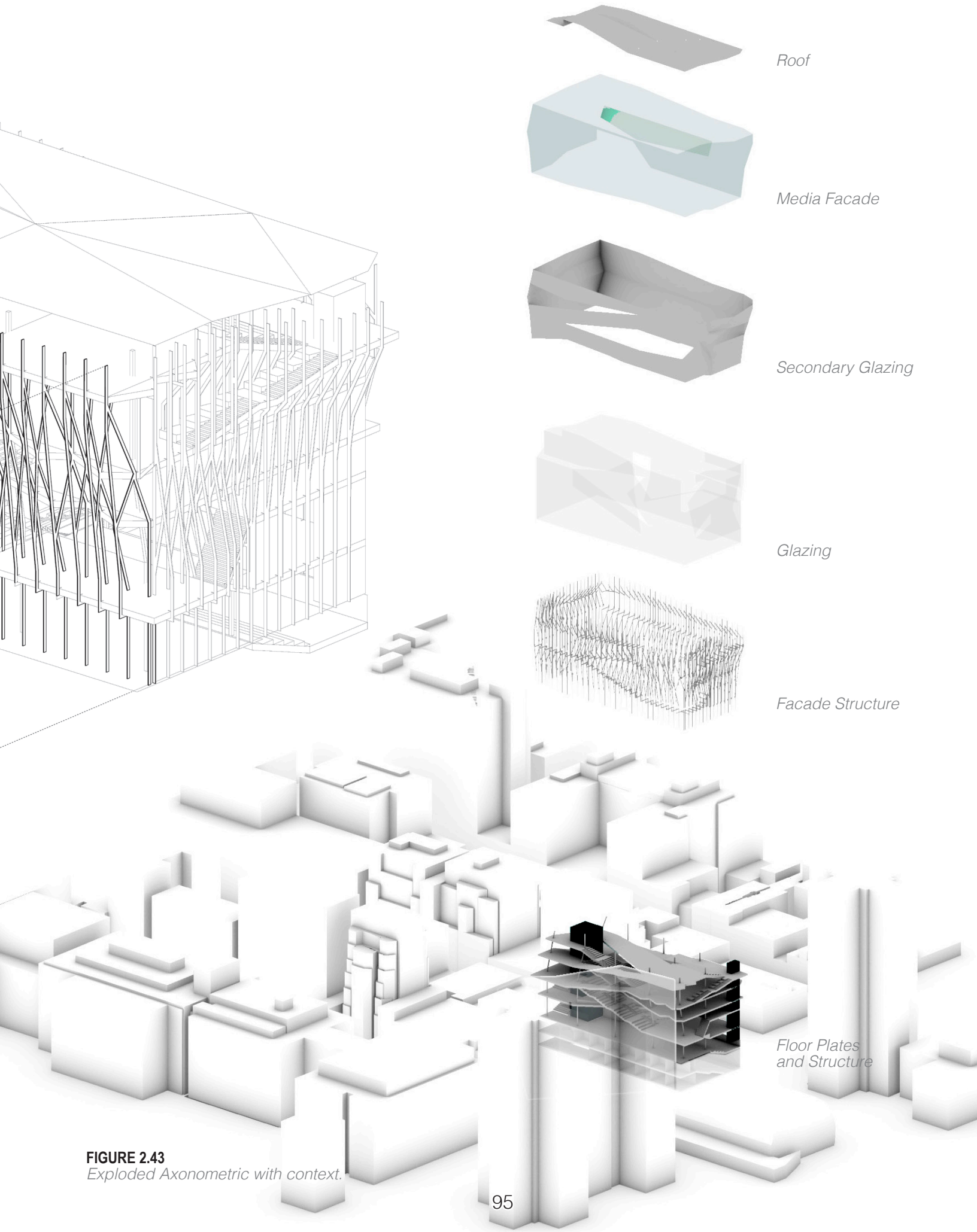
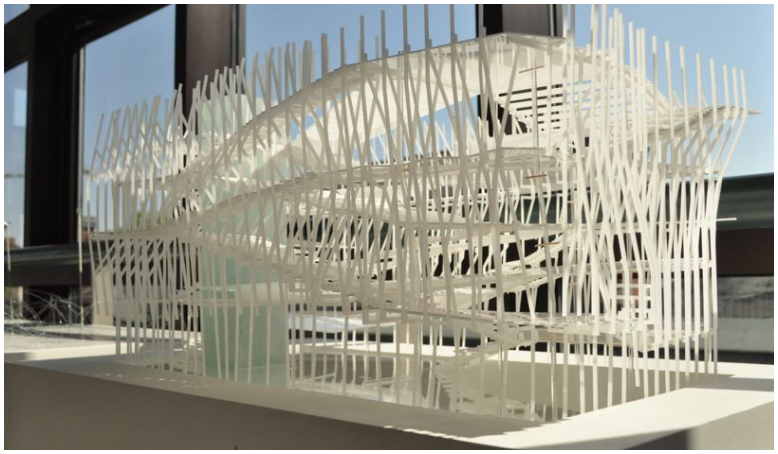


FIGURE 2.43
Exploded Axonometric with context.

FINAL PROPOSAL

The final model shows the high level of interaction created by staggering the floor plates. In order to create a more open and connective interior space, the vertical wall flattens out and becomes the stair, ramp, and staggered classrooms spaces within.



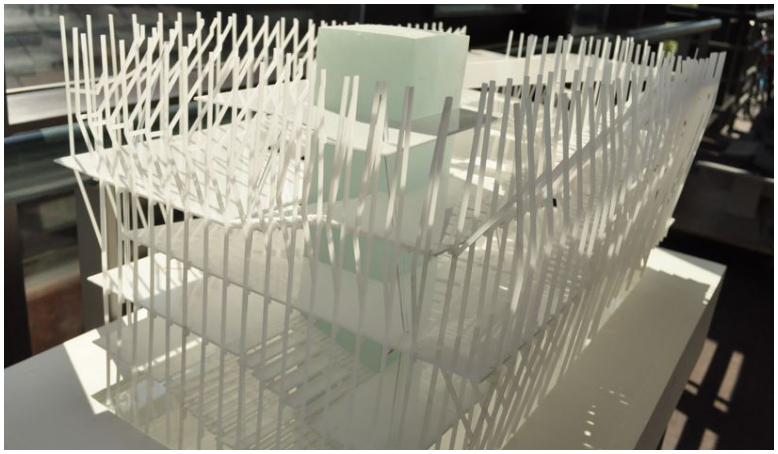
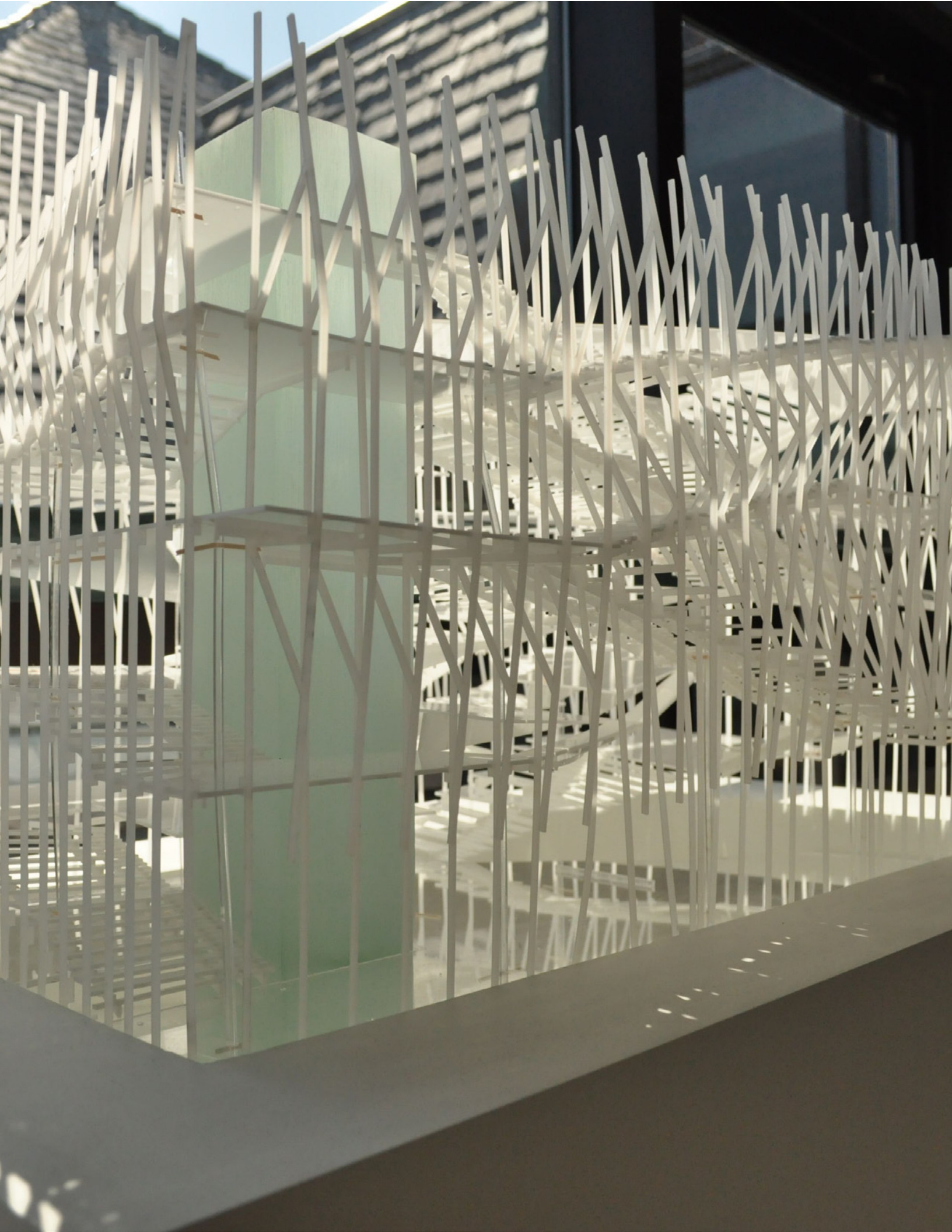
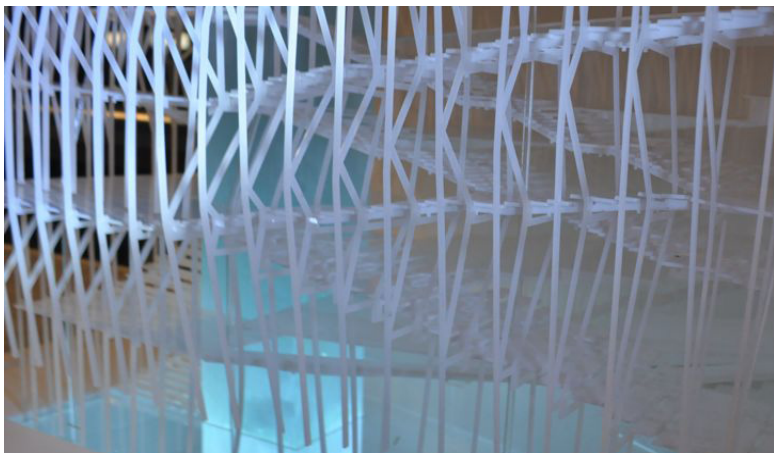


FIGURE 2.44
Final model.
-acrylic and resin on painted mdf base.





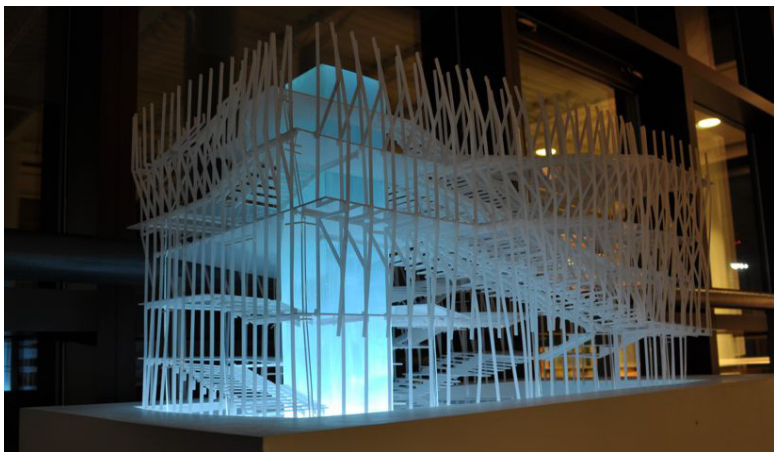
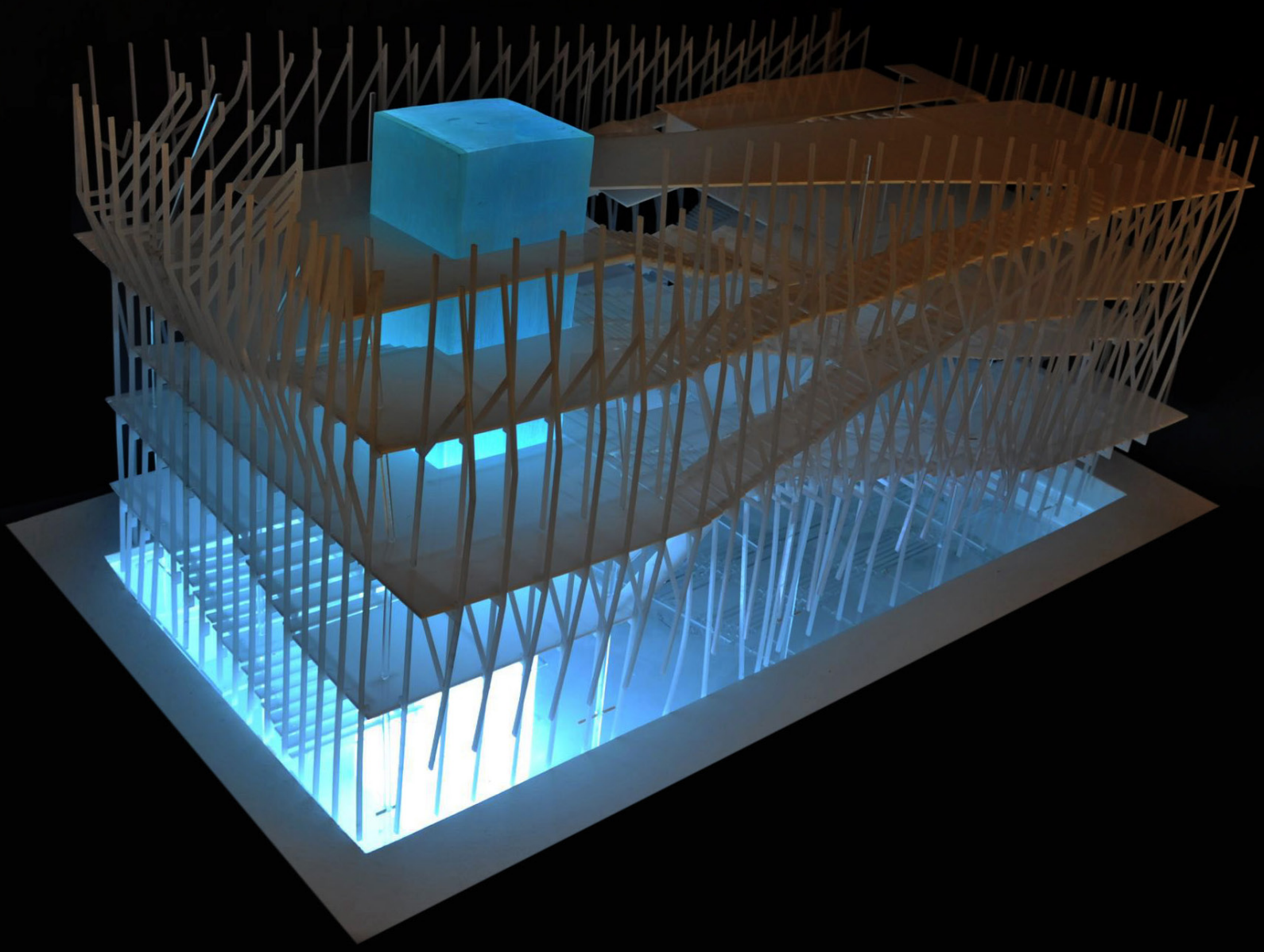
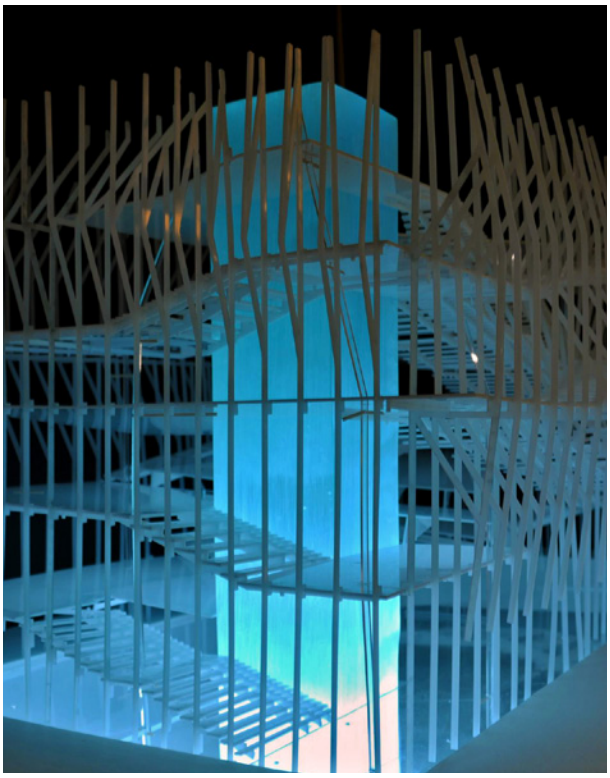
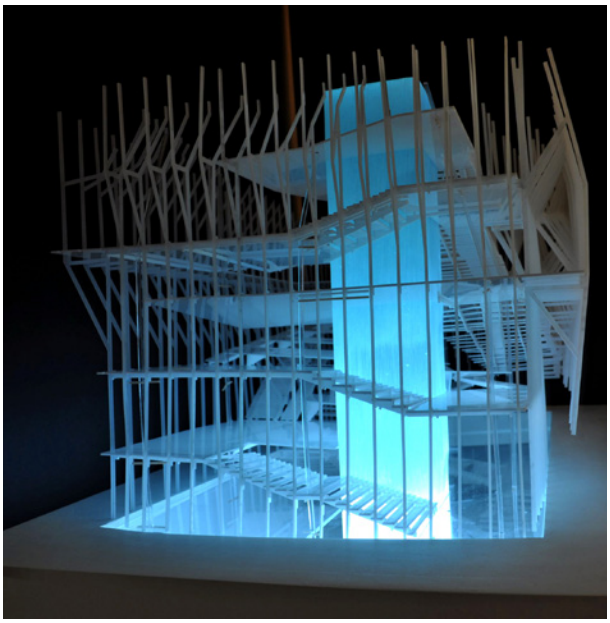


FIGURE 2.45
Final model at night.







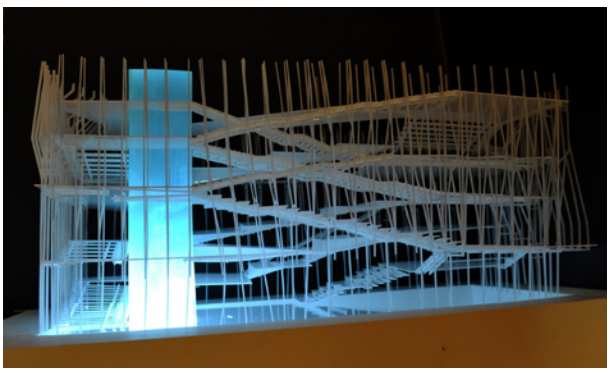
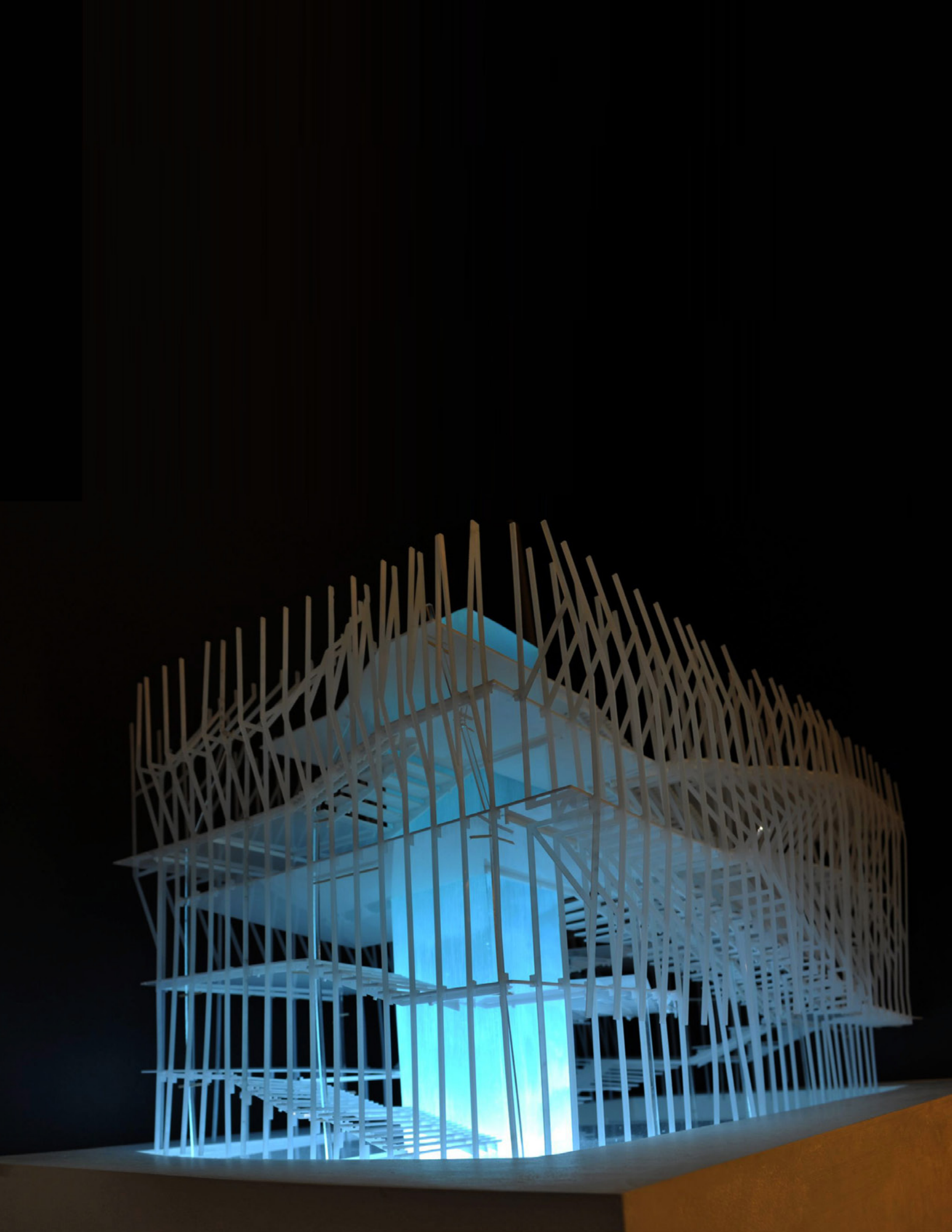


FIGURE 2.46
Final model at night.



FINAL PROPOSAL

An abstract site model was developed that showed the digital interaction across buildings in the local context. The use of fiber optics represents the physical and material aspect of the virtual realm. It is through fiber optics that data and information is able to run along at lighting fast speeds.

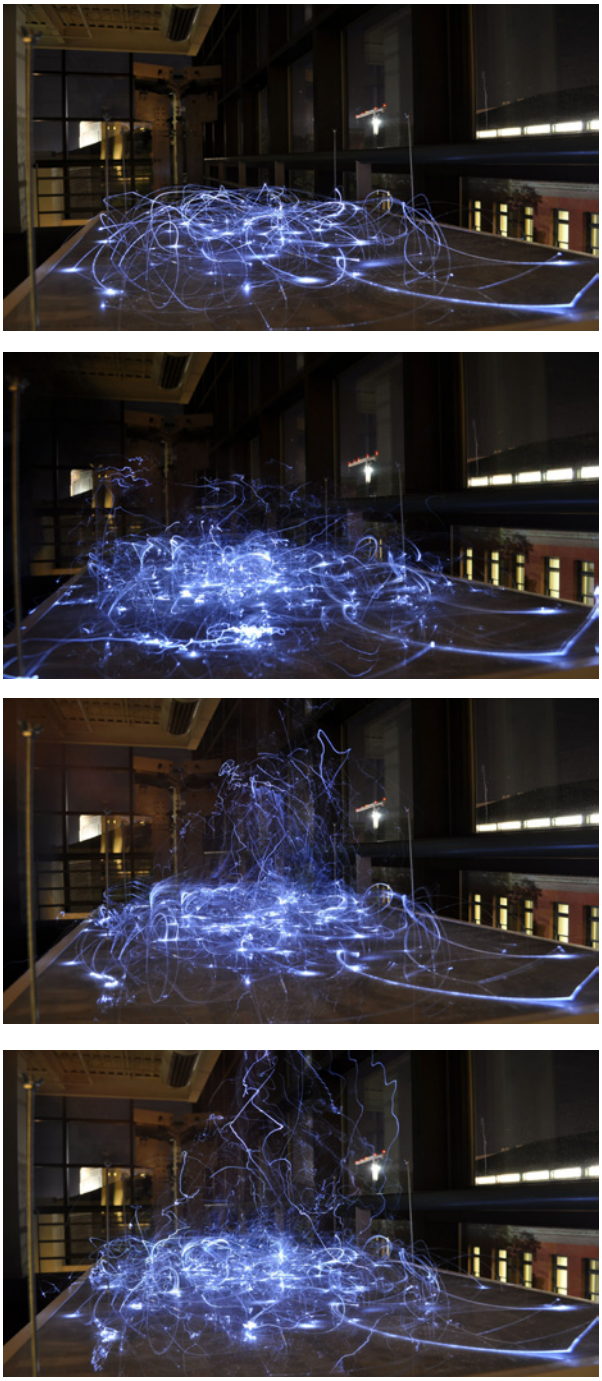


FIGURE 2.47
Fiber optics site model.

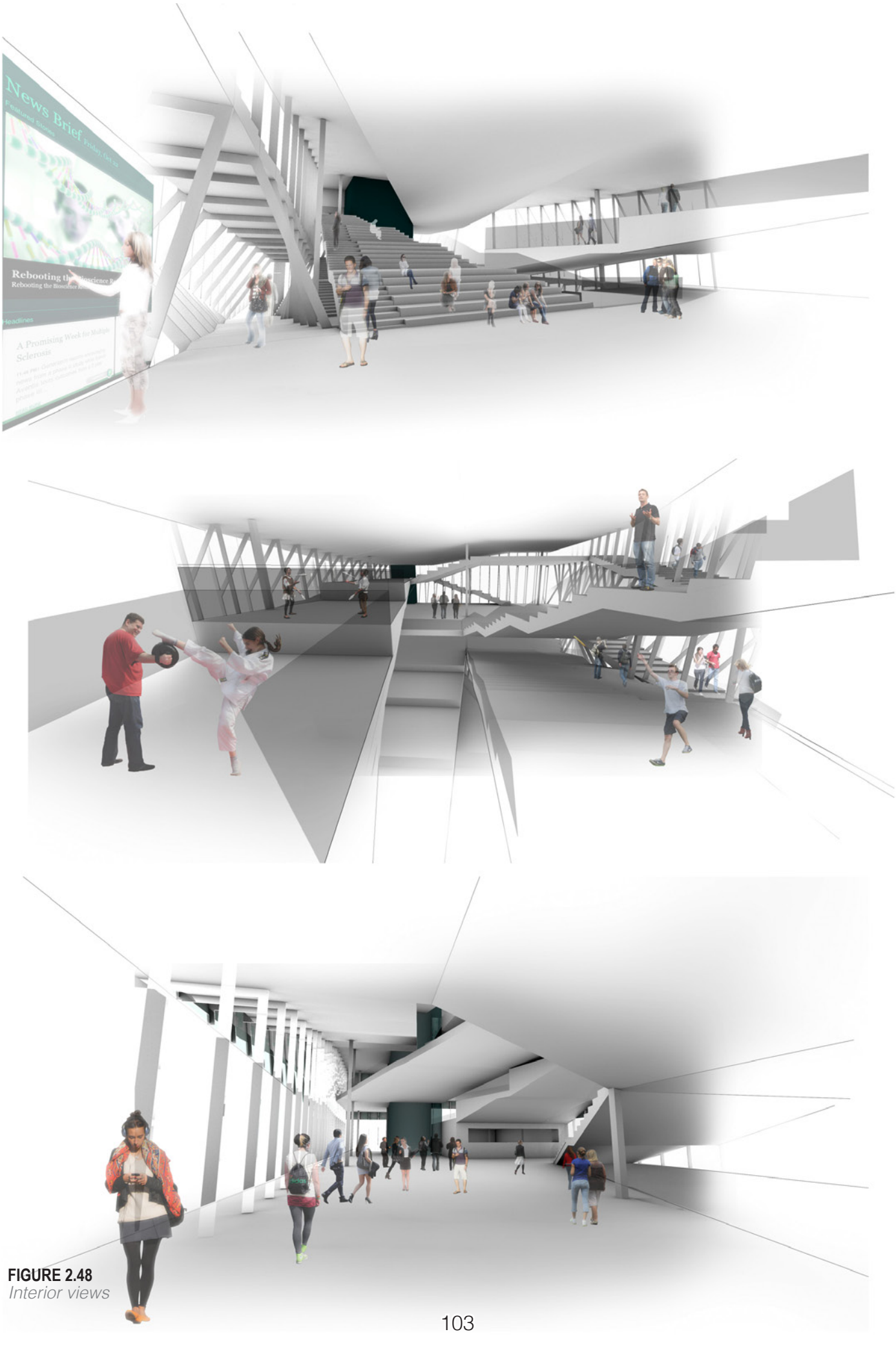
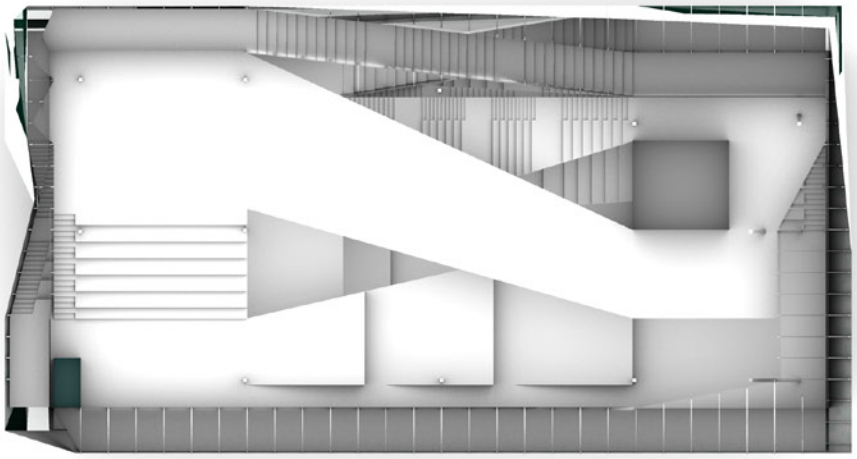
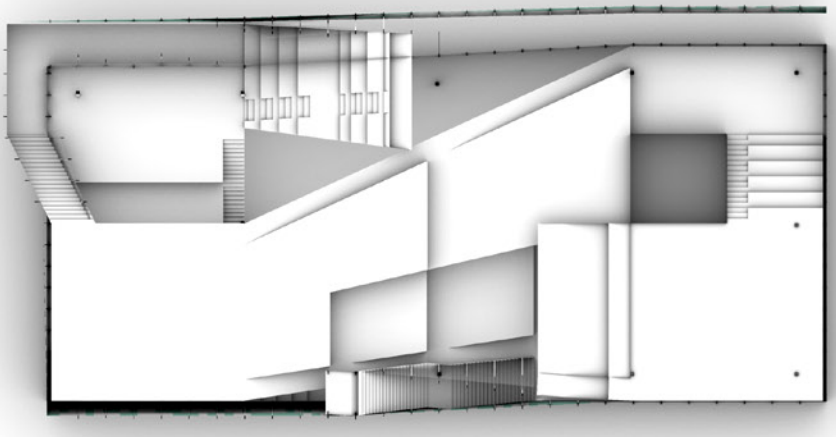
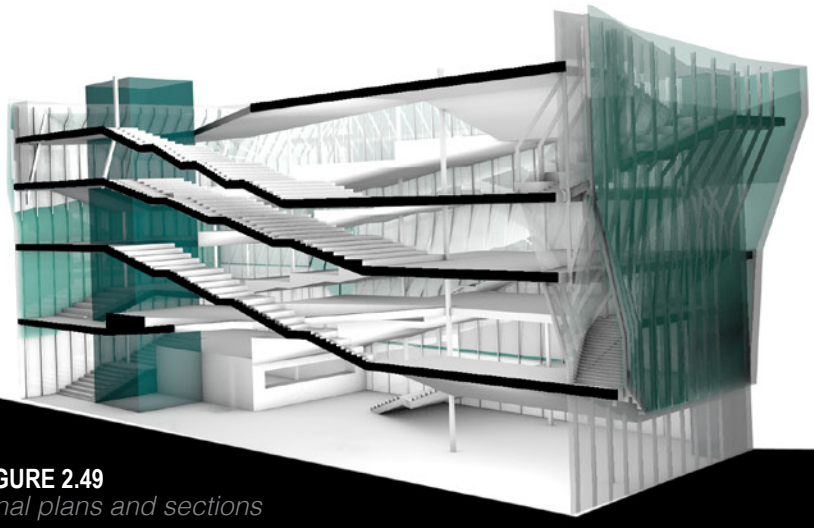


FIGURE 2.48
Interior views

FINAL PROPOSAL







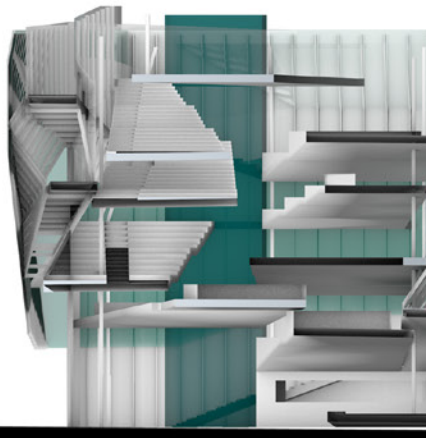
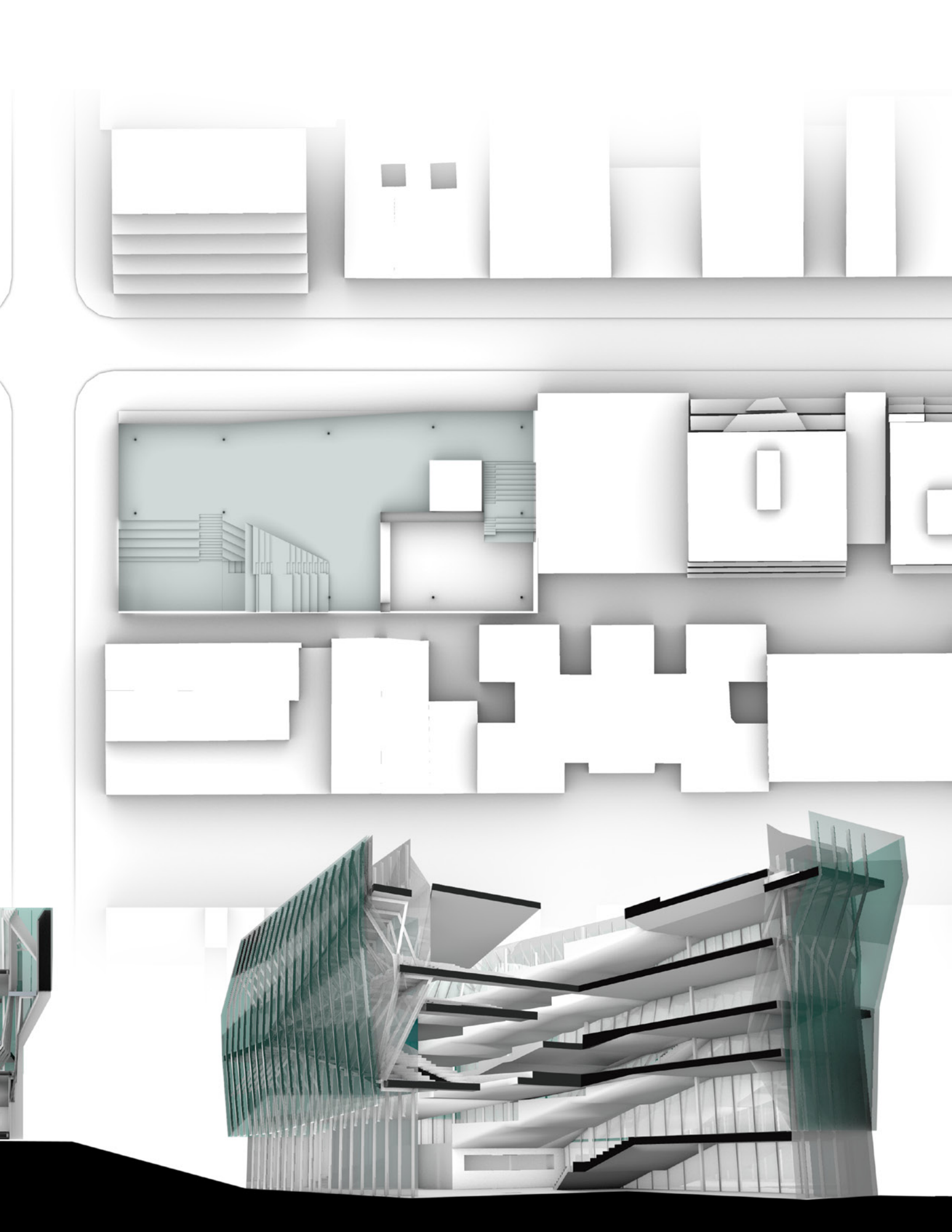
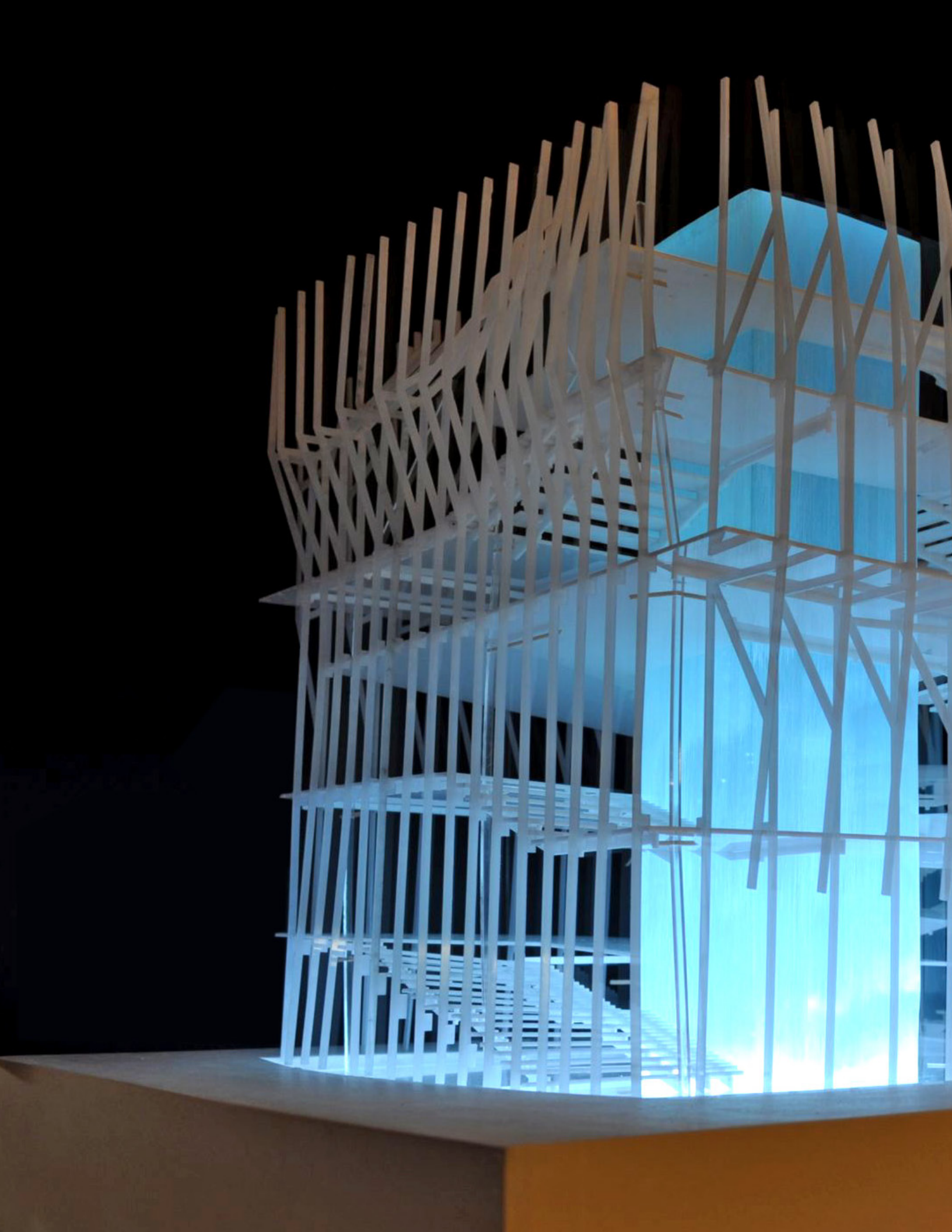


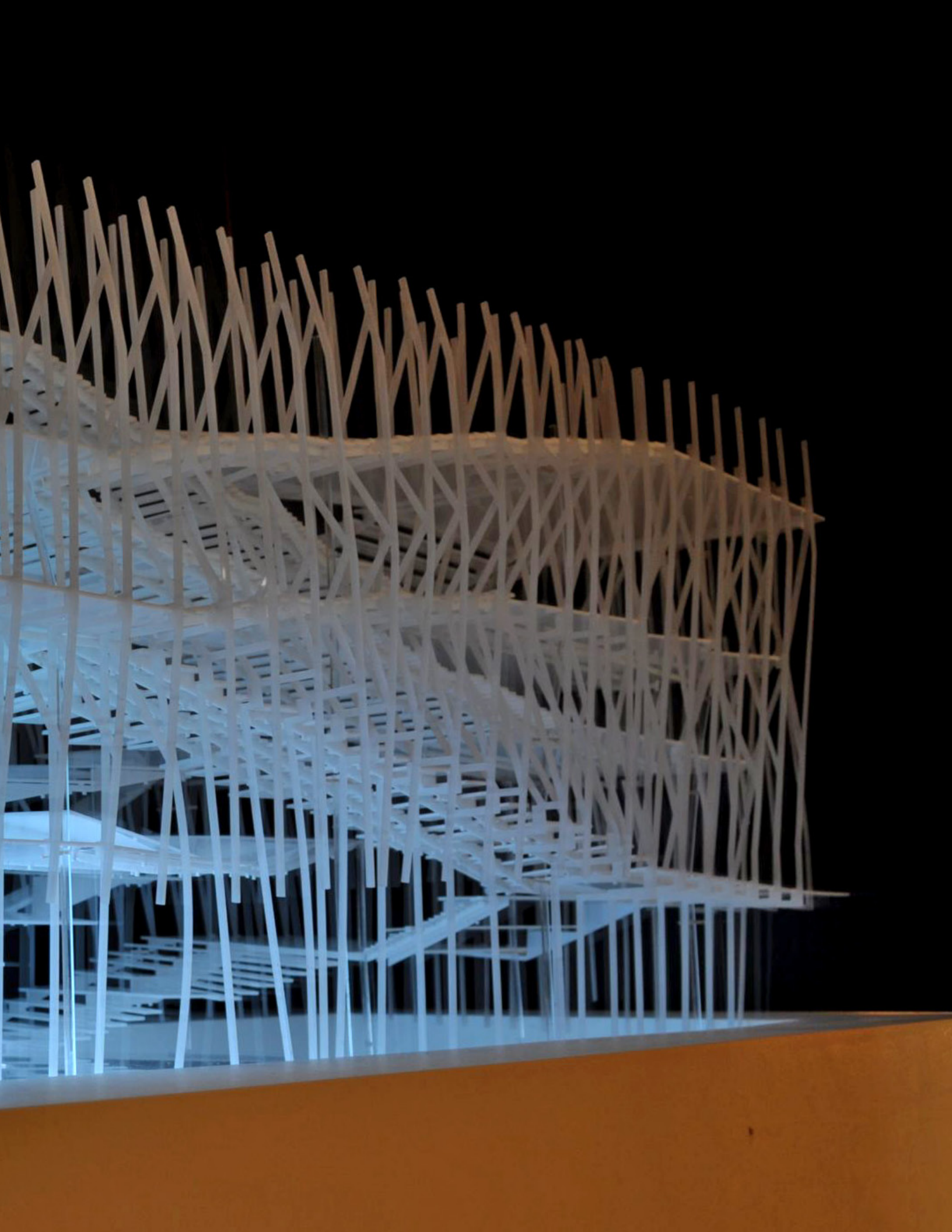
FIGURE 2.49
Final plans and sections



FINAL PROPOSAL


FIT





SUMMARY

Conclusion

As media is increasingly becoming less a source of information and increasingly a coordination device, and as power shifts to the individual, leadership itself must shift with it. With 5 billion mobile connections every day, social media is changing the way society operates, effecting everything, including the toppling of government regimes. It is changing how we socialize, communicate, play, work, and it will increasingly effect the way we learn in the future.

Social media has effectively disrupted most every part of society, expect for education which is growing more isolated and insulated from society. The global market today is rapidly demanding new fields of study in order to compete so although traditional university aren't able to respond quickly enough, social networking has proven the ability to evolve in real-time, with no lag or wasted resources. As social media continues to revolutionize the way human affairs are arranged, the classroom of the future will adapt to this change and we will see students being able to directly effect their surround educational environments.

Special Thanks

Special thanks to my mentor Janghwan Cheon for encouraging me to constantly venture deeper down the rabbit hole.

Special thanks to guest critics Brian Kelly, David Karle and Steve Hardy for helping me along the way with their wisdom.

Special thanks for Jimmy Rohr for video assistance and Taylor Hammack for assisting me with building models.

Special thanks to my parents for your support, even though you still don't know exactly what I "do."

Special thanks to my fellow Thesis students for always staying classy.

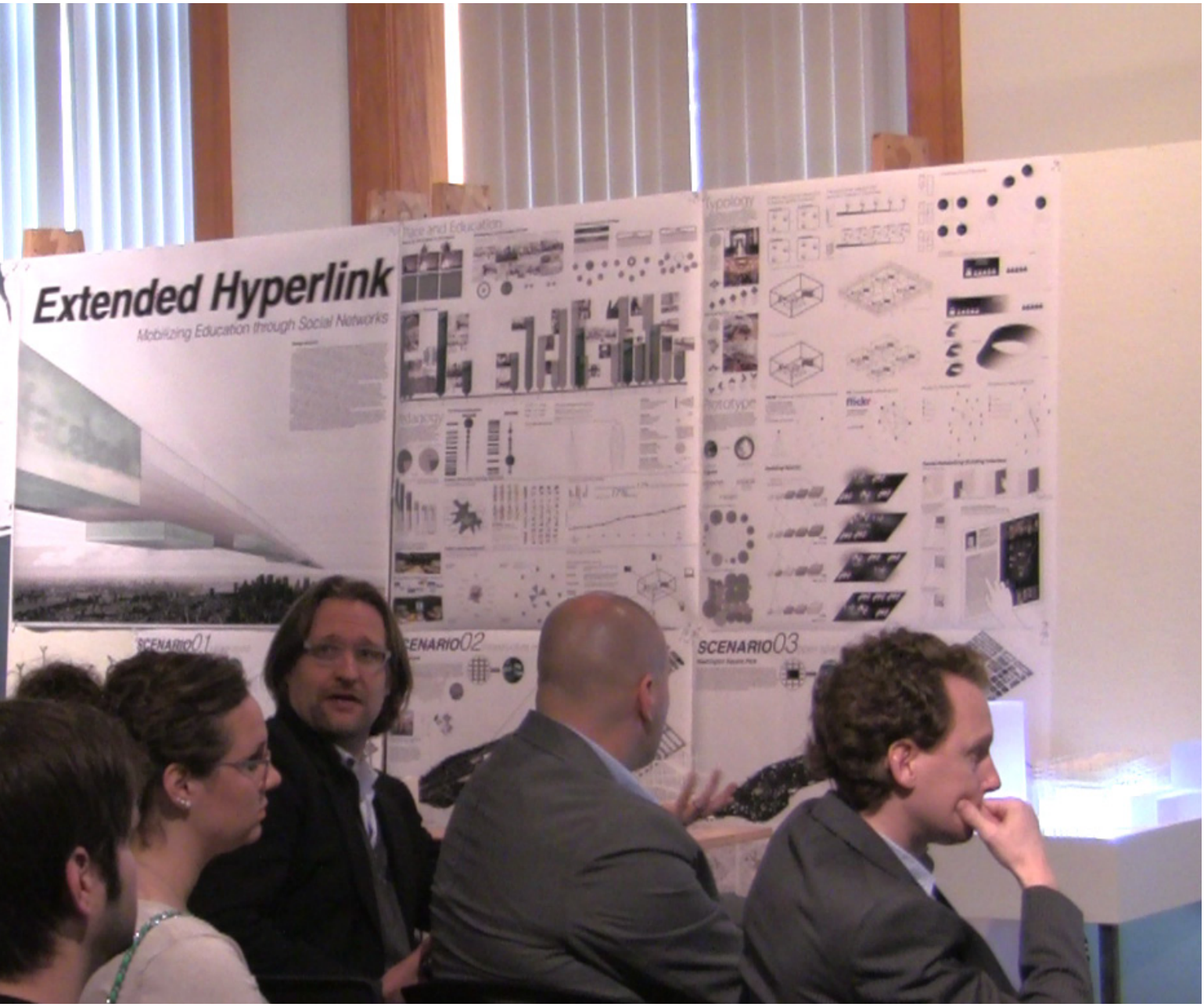


FIGURE 3.1
Final Thesis Review - April 5, 2012
Guest Critic (left): Matt Burgermaster NJIT, with Professors Brian Kelly and David Karle

BIBLIOGRAPHY

Berkel, Ben van, and Kristin Feireiss. Mobile Forces, 67. Berlin: Ernst & Sohn, 1994.

Burns, Jim. Arthropods: new design futures 70. New York: Praeger, 1972.

Dean, Penelope, and Victor Joseph. MVRDV KM3: excursions on capacities, 5. Barcelona: Actar, 2005.

Charles, Le Corbusier. Looking at city planning, 70. New York: Grossman Publishers, 1971.

Knabb, Ken. Situationist International anthology, 80, 82-90. Berkeley, Calif.: Bureau of Public Secrets, 1981.

Koolhaas, Rem. Delirious New York: a retroactive manifesto for Manhattan, 6-70. New ed. New York: Monacelli Press, 1994.

Maradia, Samarth. Media and Architecture: Deleuze media and Haptic Illusion with multiplicity of space-time in Hyperspace. Ahmedabad, India. 2003.

McQuail, Denis. Mass communication theory: an introduction. London: Sage Publications, 1983.

Mitchell, William J.. City of bits: space, place, and the infobahn. Cambridge, Mass.: MIT Press, 1995.

Packer, Randall, and Ken Jordan. Multimedia: from Wagner to virtual reality. New York: Norton, 2001.

Ross, Aldo. The Architecture of the city, 70. Cambridge - Mass.& London: MIT Press, 1982.

Tschumi, Bernard. The Manhattan transcripts, 70. 2nd ed. London: Academy Editions, 1994.

IMAGE SOURCES

Page 10 - http://media.tumblr.com/tumblr_ldpe34Z9hv1qewdea.png

Page 12 - http://upload.wikimedia.org/wikipedia/commons/d/d5/Day_14_Occupy_Wall_Street_September_30_2011_Shankbone_49.jpg

Page 13 - http://media.lehighvalleylive.com/entertainment-general_impact/photo/occupy-wall-street-84e094ee5210a45c.jpg

Page 14- http://wiki.commres.org/pds/HistoryOfMassMedia/

Page 15- http://assets.cambridge.org/97805216/83470/cover/9780521683470.jpg

Page 18- http://static.panoramio.com/photos/original/46904434.jpg

Page 20- http://upload.wikimedia.org/wikipedia/commons/6/6c/US-KS-Marian-Dist.34.Schoolhouse-EofFlorence-2006.01.jpeg

Page 21- http://www.hermes-press.com/raf_pythagoras.jpg

Page 26- http://upload.wikimedia.org/wikipedia/en/f/fa/MBC_1950s_classroom.jpg

Page 30- Hall, Chantal B. New Learning Environments:A Study of How Architecture Can Respond to Interdisciplinary and Mobile Learning. April 7, 2010, 67.

Page 36- http://awangshamsul.net/wp-content/uploads/2010/01/apple-lecture-hall.jpg

Page 38 - Hall, Chantal B. New Learning Environments:A Study of How Architecture Can Respond to Interdisciplinary and Mobile Learning. April 7, 2010, 80.

Page 39- http://www.contemporist.com/photos/

Page 40- http://www.dillerscofidio.com/works/eyebeam/

Page 42- http://morphopedia.com/uploads/

Page 65 - http://gothamist.com/attachments/jen/2012_01_nervoussystem.jpg